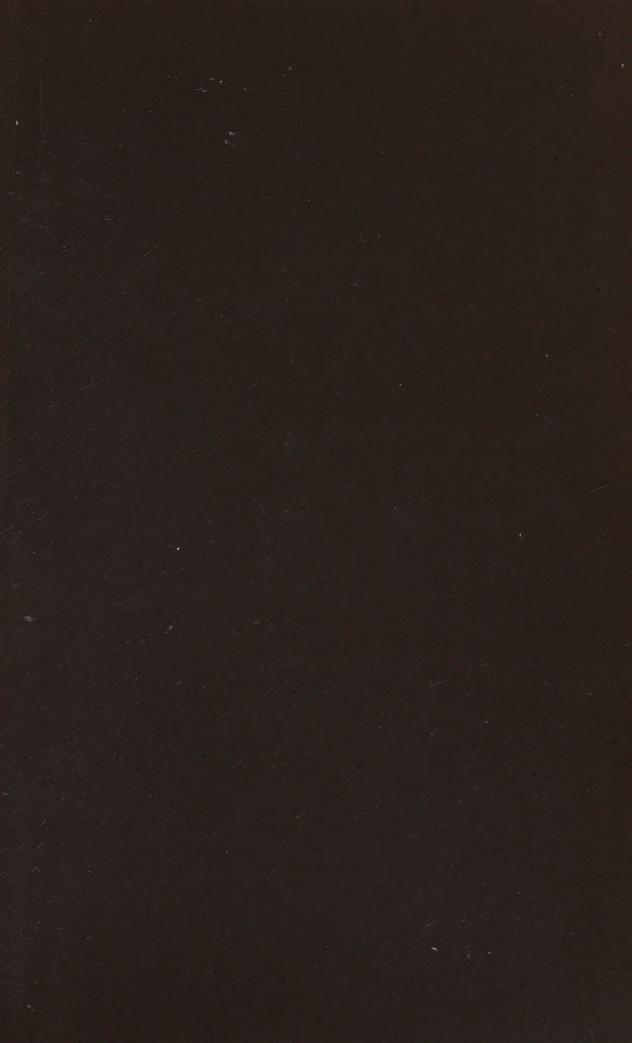
TRANSACTIONS.

SESSION 1892-93.





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ABSTRACT OF THE

TRANSACTIONS

OF THE

HUNTERIAN SOCIETY,

1892-93.

SEVENTY-FOURTH SESSION.



Ratio Societatis Vinculum.

LONDON:

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FOR THE SESSION 1893-94.

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- RUDOLPH VIRCHOW, M.D., LL.D., Professor of Pathological Anatomy in the University of Berlin.

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- * Life Fellow by Purchase, in accordance with Law LXII.
- ** Life Fellow by the payment of Twenty-five Annual Subscriptions, in accordance with Law LXIII.
- (C) Member of Council.

When Admitted.

- 1893 Adams, John 180, Aldersgate Street, E.C.
- 1856 ** Allingham, William, late Senior Surgeon to St. Mark's Hospital, 25, Grosvenor Street, W.
- 1884 APPLEFORD, STEPHEN H., M.D., 17, Finsbury Circus, E.C.
- 1864 ** Bader, Charles, Consulting Ophthalmic Surgeon to Guy's Hospital, 10, Finsbury Circus, E.C.
- 1889 Barlow, Thos. C. ... 88, Dalston Lane, N.E.
- 1854 **BARNES, ROBERT, M.D., late President, Consulting Obstetric Physician to St. George's Hospital, 7, Queen Anne Street, W., and Lingwood, Liss, Hants.
- BARRETT, ASHLEY WM., M.B., Surgeon Dentist to, and Lecturer on Dental Surgery at, the London Hospital, 42, Finsbury Square, E.C.

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Wher Admitte	
1892	Bass, Frederick 17, Charterhouse Square, E.C.
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1875	Beach, Fletcher, M.B 64, Welbeck St., Cavendish Square, W., and Two Elms, Chislehurst Road, Sideup, Kent.
1888	Bedford, R. Thomas 42, Malden Rd., Kentish Town, N.W.
1892	*Beevor, Sir Hugh R., Bart., M.B., Assistant Physician to King's College Hospital and to the City of London Hospital for Diseases of the Chest King's College Chambers, Strand, W.C.
1893	Berrill, Alfred Waveney House, High Road, South Woodford, Essex.
1860	**Berry, Henry T 66, Pembridge Villas, Bayswater, W.
1886	Beswick, Robert 71, Bishopsgate Street Without, E.C.
1875	Blewitt, Byron 12, St. Mary Axe, E.C.
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1865	*Brownfield, Matthew, Surgeon to the Poplar Hospital, 171, East India Road, Poplar, E.
1862	**Bryant, Thomas, M.Ch., late President, Consulting Surgeon to Guy's Hospital 65, Grosvenor Street, W.
1871	Buncombe, Chas. H., Medical Superintendent, City of London Infirmary Bow Road, E.
1889	BURGER, ALEXANDER, M.D., M.Ch. (C), Surgeon to the German Hospital 49, Finsbury Square, E.C.
1892	Burgess, Edward A 19, Ash Grove, Cricklewood, N.W.
1889	Burghard, Fréd. F., M.S., M.D., Assistant Surgeon to King's College Hospital 46, Weymouth Street, W.
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1884	CATTELL, G. TREW, M.D 416, New Cross Road, S.E.
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1892	CHEATLE, ARTHUR H. 24, Finsbury Circus, E.C. The Evelina Hospital for Sick Children Southwards S.F.
1892	dren, Southwark, S.E. CHETHAM-STRODE, REGINALD, M.B., M.C., 104, Bethune Road, Stoke Newington, N.
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8 When Admitted. 1858 ** Corner, Francis M., Co-Trustee, late President, Surgeon to the ... Manor House, East India Poplar, E. Poplar Hospital ... 1890 Corner, Harry, M.B. ... Bethlem Royal Hospital, S.E. 1890 CORNER, M. CURSHAM ... 113, Mile End Road, E. 1882 COTMAN, J. S. E., Orator ... 140, Minories, E. 1862 ** COUPER, JOHN, late President, Consulting Surgeon to the London Hospital 80, Grosvenor Street, W. 1889 CRESSY, A. Z. CLAYDON ... Haysden, Wallington, Surrey. 1854 ** Crosby, Thomas B., M.D., late President, 19, Gordon Square, W.C., and 13. Fenchurch Street, E.C. 1885 DAVIES, ARTHUR T., B.A., M.D., Librarian, Physician to the Royal Hospital for Diseases of the Chest, Assistant Physician to the Metropolitan Hospital ... 23, Finsbury Square, E.C. DAVIES, JOHN 91, New North Road, N. DAWSON, BERTRAND E., M.B., B.Sc., Assistant Physician to the Royal 1879 1892 Hospital for Diseases of the Chest, and Demonstrator of Physiology at the London Hospital... 46, Finsbury Pavement, E.C. DINGLE, WILLIAM A.... ... 46, Finsbury Square, E.C DUKES, WM. P., M.D. ... 75, Brick Lane, E. DUNN, LOUIS A., M.B., M.S., Senior Demonstrator of Anatomy at 1892 1883 1889 ... The College, Guy's Hospital, S.E. Guy's Hospital ... 1858 ** DURHAM, ARTHUR E., late President, Senior Surgeon to Guy's ... 82, Brook Street, Grosvenor Square, W. Hospital ... ETTLES, W. J. McCulloch, M.B., C.M., 97, Albany Road, Camberwell, 1892 1872 FENDICK, THOMAS ROWING The Charterhouse, Charterhouse 1892 FLETCHER, ALFRED C. Square, E.C. Forbes, Daniel M. ... 204, Hoxton Street, N. 1877 1854 ** Fotherby, Henry I., M.D., Co-Trustee, late President, Consulting Physician to the Metropolitan Hospital, Woodthorpe Cote, Wray Common, Reigate, Surrey. 1885 Fox, R. Hingston, M.D., Secretary, 23, Finsbury Square, E.C. GALABIN, ALFRED L., M.A., M.D., Obstetric Physician to, and Lecturer 1875 on Midwifery at, Guy's Hospital, 49, Wimpole Street, W. GALLOWAY, A. WILTON ... 99, New North Road, N. GALLOWAY, JAMES, M.A., M.B., C.M., Assistant Physician to the 1888 1891 Great Northern Central Hospital, 16, Finsbury Circus, E.C. 1893 ... Eversley House, Burton Road, Kilburn, George, Alfred W.... N.W.*Gervis, Henry, M.D., late President, Consulting Obstetric Physician 1863 to St. Thomas's Hospital 40, Harley Street, W. 1876 *GILBERT, EDWARD G., M.D.... 90, Finchley Road, Hampstead, N.W. 1893 ... 747, Commercial Road, E. Godding, James

... 17, Devonshire Place, Upper Wimpole

82, Gloucester Terrace, Hyde Park, W.

Street, W.

... 22, City Road, E.C.

1862 ** GOWLLAND, PETER Y., late Senior Surgeon to St. Mark's Hospital,

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GRANT, ALEXANDER, M.A., M.D., 370, Commercial Road East, E.

1877

1875 1891 GOODSALL, DAVID H....

GRANT, HOPE...

When Admitted.

Grant, J. Dundas, M.A. M.D., C.M., Vice President and Orator, Surgeon to the Central London Throat and Ear Hospital, 8, Upper Wimpole Street, W.

1887 Grant, Leonard, M.D. ... 9, Western Villas, New Southgate, N.

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1862 ** Greenwood, Major, M.D. ... 26, Queen's Road, Dalston, N.E.

1893 Grogono, Walter A. ... Berwick House, Broadway, and 216, High Street, Stratford, E.

1892 HAWKES, LEWIS A., M.D., C.M. 9, Fore Street, Cripplegate, E.C.

1875 *Herman, George Ernest, M.B., Obstetric Physician to, and Lecturer on Midwifery at, the London Hospital, 20, Harley Street, W.

1888 HEWER, J. LANGTON, M.D., B.S. 33, Highbury New Park, N.

1862 ** Hicks, G. Borlase 149, Amhurst Road, Hackney, N.E.

1860 ** Hicks, John Braxton, M.D., F.R.S., late President, Consulting Obstetric Physician to Guy's Hospital, and to St. Mary's Hospital ... 34, George Street, Hanover Square, W.

1889 HOGARTH, CHRISTOPHER W.... Wellesley Villas, Ashford, Kent.

1883 HORROCKS, PETER, M.D., Assistant Obstetric Physician to Guy's Hospital 26, St. Thomas's Street, S.E.

1884 HOUCHIN, EDMUND KING ... 23, High Street, Stepney, E.

*HOVELL, T. MARK (C), Senior Surgeon and Aural Surgeon to Hospital for Diseases of Throat, Golden Square; Aural Surgeon to, and Lecturer on Diseases of the Throat at, the London Hospital,

105, Harley Street, W.

1889 Humphreys, Francis R. (C), 27, Fellows Road, South Hampstead, N.W.

1855 ** Hutchinson, Jonathan, LL.D., F.R.S., late President, Consulting Surgeon to the London Hospital, 15, Cavendish Square, W.

1884 Jackson, George H.... ... 6, Cliff Bridge Terrace, Scarborough, Yorkshire.

1862 ** Jackson, J. Hughlings, M.D., F.R.S., late President, Senior Physician to the London Hospital, 3, Manchester Square, W.

1893 Kingsford, Edward Claude, Carntyne, Brondesbury, N.W.

LANG, WILLIAM, Ophthalmic Surgeon to the Middlesex Hospital, and Surgeon to the Royal Ophthalmic Hospital, Moorfields, 22, Cavendish Square, W.

1885 LARKIN, FREDK. G. ... Grove Park, Kent, S.E.

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1863 *LITTLE, LOUIS S., late Surgeon to the London Hospital, Shanghai, China.

1834 ** LITTLE, WM. J., M.D., late President, Consulting Physician to the National Orthopædic Hospital, Ryarsh, near West Malling, Kent.

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1874 *Lucas, R. Clement, B.S., M.B., late President, Surgeon to, and Lecturer on Anatomy at, Guy's Hospital; Senior Surgeon to the Evelina Hospital for Sick Children, 18, Finsbury Square, E.C.

When Admitted.

- Lyon, Thos. Glover, M.A., M.D., Assistant Physician to the City of 1892 London Hospital for Diseases of the Chest, 8, Finsbury Circus, E.C.
- McCarthy, Jeremiah, M.A., M.B., Surgeon to, and Lecturer on 1869 Surgery at, the London Hospital, 15, Finsbury Square, E.C.
- MACKENZIE, STEPHEN, M.D., late President, Physician to, and 1876 Lecturer on Medicine at, the London Hospital, 18, Cavendish Square, W.

Manson, Patrick, M.D., LL.D., 21, Queen Anne Street, W. 1891

- Marshall, Thomas, M.A., M.B., 55, Fortess Road, Kentish Town, N.W. 1891
- 1850 ** MILLER, CLAUDIUS M., M.D.... 100, Stoke Newington Road, N.
- 1841 ** Munk, William, M.D., Harveian Librarian, Royal College of ... 40, Finsbury Square, E.C. Physicians ...
- 1837 ** OLDHAM, HENRY, M.D., Consulting Obstetric Physician to Guy's ... 4, Cavendish Place, W. ... 2, Kingsland Road, N.E. Hospital ...

OLIVER, FRANKLIN H. 1890

- OLIVER, JOHN W., M.D., M.Ch., Hackney Union Infirmary, Homerton, 1892 N.E.
- OPENSHAW, T. HORROCKS, M.S., M.B., Secretary, Assistant Surgeon 1884 to, and Lecturer on Anatomy at, the London Hospital, 16, Wimpole Street, W.

OSBURNE, CECIL A. P. ... The Oaks, Hythe, Kent. 1893

PERRY E. COOPER, M.D. (C), Medical Superintendent, and Assistant 1888 Physician to, and Demonstrator of Morbid Anatomy at, Guy's Hospital, S.E.

... 50, Southgate Road, N. 1864 ** Pettifer, Edmund H.

- PITT, G. NEWTON, M.D. (C), Assistant Physician to, and Lecturer on 1888 Pathology at Guy's Hospital, 24, St. Thomas's Street, S.E.
- POLAND, JOHN, Vice-President, Visiting Surgeon to the Miller Hospital, 1881 ... 4, St. Thomas's Street, S.E.
- PORT, HEINRICH, M.D., Physician to the German Hospital, 48, Fins-1875 bury Square, E.C.
- POTTER, GEORGE W., M.D., C.M. 8, King Street, Cheapside, E.C., and 1882 3, Belsize Terrace, South Hampstead, N.W.
- Pye-Smith, P. H., B.A., M.D., F.R.S., late President, Senior Physician 1870 to, and Lecturer on Medicine at, Guy's Hospital, 48, Brook Street, W.
- 1851 ** RAMSKILL, J. SPENCE, M.D., Consulting Physician to the London ... 5, St. Helen's Place, E.C. Hospital ...
- ... 185, Evering Road, Upper Clapton, N.E. RAVERTY, G. A. 1893
- ... Oakbank, Crystal Palace Park Road. RAW, WM. E. St. M.... 1890 Sydenham, S.E.

... St. Luke's Hospital, E.C. RAWES, WILLIAM, M.B. 1892

READ, HENRY G., Surgeon to the National Dental Hospital, &c., 1888 30, Finsbury Square, E.C.

REYNOLDS, W. PERCY (C) ... 128, Stamford Hill, N. 1888

1866 ** RIVINGTON, WALTER, M.B., M.S., late President, Consulting Surgeon to the London Hospital... 95, Wimpole Street, W.

When Admitted.

- 1855 ** ROPER, GEORGE, M.D., Consulting Physician to the Royal Maternity Charity ... Oulton Lodge, Aylsham, Norfolk.
- 1888 Ryle, Reginald J., M.A., M.B., Hadley Green, High Barnet, Herts.
- 1853 ** Saunders, W. Sedgwick, M.D., F.S.A., late President, Medical Officer of Health for the City of London, 13, Queen Street, Cheapside, E.C.
- 1884 SCARTH, ISAAC, M.B., B.S. ... 29, Amwell Street, E.C.
- 1892 Scott, Patrick Cumin, B.A., M.B., Physician to the Miller Hospital, Greenwich ... 38, Shooter's Hill Road, Blackheath, S.E.
- 1892 SEQUEIRA, GEORGE W. ... 34, Jewry Street, Aldgate, E.C.
- 1890 SEQUEIRA, HENRY J. ... 34, Jewry Street, E.C.
- 1842 ** Sewell, Charles Brodie, M.D., 21, Cavendish Square, W., and 13, Fenchurch Street, E.C.
- 1891 Shadwell, St. Clair B. ... Lynhurst, Orford Road, Walthamstow, Essex.
- 1888 Shaw, Lauriston E., M.D., Assistant Physician to Guy's Hospital, 10, St. Thomas's Street, S.E.
- 1854 ** Shillitoe, Buxton, Surgeon to the Lock Hospital, 2, Frederick Place, Old Jewry, E.C.
- 1869 Smee, Alfred H. ... The Grange, Hackbridge, Surrey.
- 1887 SMITH, FREDERICK JOHN, B.A., M.D. (C), Assistant Physician and Pathologist to the London Hospital,

 4, Christopher Street, Finsbury Square, E.C.
- 1875 Stevens, George J. B. ... Wadhurst House, Stoke Newington Green, N.
- 1892 Stocker, Charles Joseph ... Weston House, Romford Road, Forest Gate, E.
- 1884 Stowers, James Herbert, M.D., Physician for Diseases of the Skin at the North-west London Hospital, 41, Finsbury Square, E.C.
- Symonds, Charters J., M.S., M.D., Assistant Surgeon to, and in charge of Throat Department, and Teacher of Practical Surgery at, Guy's Hospital ... 26, Weymouth Street, Portland Place, W.
- 1878 Talbot, Russell M. Clarendon House, 155, Bow Road, E.
- 1889 TARGETT, JAS H., M.B., M.S., Assistant Surgeon to the Evelina Hospital, and Demonstrator of Anatomy at Guy's Hospital, 6, St Thomas's Street, S.E.
- 1879 TATHAM, ROBERT G. ... 69, East India Road, E.
- 1869 Tay, Waren, Senior Surgeon to the London Hospital, 4, Finsbury Square, E.C.
- 1880 Thorp, Henry J. (C) ... 11, Southwark Bridge Road, S.E.
- Tubby, Alfred H., M.B., M.S. (C), Demonstrator of Physiology at Guy's Hospital ... 39, Finsbury Circus, E.C.
- Turner, F. Charlewood, M.A., M.D., Treasurer, Physician and Pathologist to the London Hospital, 15, Finsbury Square, E.C.
- 1890 WALKER, CHAS. R., M.D. ... Gainsborough House, Leytonstone, N.E.
- 1887 WALLACE, FREDERICK ... Foulden Lodge, Upper Clapton, N.E.

When Admitted.	
1857	*Wallace, Richard U., M.B., Cravenhurst, Craven Park, Stamford Hill, N.
1887	Warner, Percy (C) Woodford Green, Woodford, Essex.
1892	Watson, James, Brigade Surgeon, Army Med. Staff, Tower of London, E.C.
1876	Welch, Chas 377, Hackney Road, E.
1876	WHITE, JOHN B., M.D., M.Ch., 14, Portland Place, Lower Clapton, N.E.
1888	WIGHTWICK, FALLON PERCY, M.D., 5, Curlew Street, Horsleydown, S.E.
1893	WILLIAMS, GEORGE ROWLAND, 27, Queen Street, Cheapside, E.C.
1888	Wingrave, Thos 43, Finsbury Circus, E.C.
1887	Woods, John F Hoxton House Asylum, N.
1882	Worley, William C 103, Green Lanes, N.
1889	Wright, Holland H 2, Ospringe Road, St. John's College Park, N.W.
1880	Yarrow, Geo. E., M.D. (C) 26, Duncan Terrace, Islington, N.

[It is requested that any change of Title, Appointment or Residence may be communicated to one of the Secretaries before the Annual General Meeting, in order that the list may be made as correct as possible.]

CORRESPONDING FELLOWS.

Barlow, Robert	• • •	Orlebar, St. Peter's, Isle of Thanet.
Barnard, John H., M.D.	***	362, Rue St. Honoré, Paris.
CANFIELD, RALPH M	• • •	Boston, U.S.A.
English, Edgar	• • •	Mexborough, Rotherham, Yorks.
HIRSCH, CHAS. T. W	• • •	Fiji.
Pierce, Bedford, M.D.	• • •	The Retreat, York.
ROBERTS, BRANSBY, M.D.	• • •	Badlesmere House, Eastbourne.
TREVES, WILLIAM KNIGHT	• • •	31, Dalby Square, Margate.

THE SEVENTY-FOURTH ANNUAL REPORT

OF THE

COUNCIL OF THE HUNTERIAN SOCIETY.

In presenting the Report of the Seventy-fourth Session, the Council has the gratification of stating that the Society has fully maintained its renewed vigour and prosperity.

The Society is much indebted to the President for the able manner in which he has occupied the chair during the past Session, and for the energy and interest he has displayed in the conduct of its affairs.

The two Hunterian Society Lectures for the Session were delivered, that at the end of February last by Dr. Hughlings Jackson, F.R.S., on "Neurological Fragments"; and that at the commencement of October by Dr. Robert Barnes, on "Absorption in relation to Physiology, Pathology, and Therapeutics." Both were much appreciated by the Fellows and other members of the profession who attended.

Among other important papers read during the Session may be mentioned those by Dr. James Galloway, on "Protozoa as causes of disease"; by Dr. Stephen Mackenzie, on "Urticaria"; by Mr. Denton Cardew, on "The Electrical Treatment of Graves' Disease"; and by Mr. Tubby, on "Compression Paraplegia following Potts' Disease."

A discussion on "Phthisis in relation to Life Assurance" was held on October 26th. The subject was introduced by a paper read by Dr. Glover Lyon, and was ably handled by several eminent medical authorities who were present, and its record will be found to form a valuable addition to medical literature.

The Clinical and Pathological evenings have continued to be occasions of much interest—many rare and interesting cases and specimens having been exhibited.

The attendances at the meetings, which have been even larger than during the previous two years, and the addition

to the number of new Fellows, afford the best proof of the interest taken in the Society's work.

Twenty-one new Fellows have been admitted since the last Annual Meeting, two have resigned, and one has become a Corresponding Fellow. The total number of Fellows is 181, of which 166 are Ordinary Fellows, 8 Honorary, and 7 Corresponding Fellows. The increase in the number of Fellows would have been larger had not the Society lost no less than seven of its number by death during the year.

Five of these were Ordinary Fellows:—Mr. Cock, Dr. W. M. Cooke, Dr. Burchell, Dr. Hess, and Mr. Esquire Dukes. One was an Honorary Fellow, Sir Richard Owen; and one a Corresponding Fellow, Mr. H. Moon.

By the death of SIR RICHARD OWEN, K.C.B., F.R.S., F.R.C.S. (Hon.), on 18th December, almost the last link connecting the present time with the Medical history of the early part of this century has been severed. He had earned a title to the highest esteem and veneration of the Society, not only by many acts of kindness, and by his deep interest in the welfare of the Society, but by the example of a long life spent in the unfaltering pursuit of Science. Honours were bestowed upon him both by Royalty and by Scientific Societies at home and abroad, for his attainments in science and for the lustre he has helped to shed upon the Victorian Era. The Council is glad to know that a large committee, of which the President is a member, is taking energetic steps to raise a memorial worthy of his national fame.

Sir Richard Owen was elected an Honorary Member of the Society in 1837, when Professor of Comparative Anatomy at the Royal College of Surgeons, Mr. William Clift, who became his father-in-law, having been made an Honorary Member some years earlier.

His frequent attendance at the Annual Dinners of the Hunterian Society will be still within the memory of many of the Fellows; in later years on these occasions he slept afterwards at the house of Dr. Cooke, the founder of the Society. The dinner in 1876 was probably the last he attended, and even then he spoke of his feeble health, and

hoped that he might live long enough to arrange the new Natural History Museum. He did, however, much good work after that date.

The life-long devotion shown by Sir R. Owen in elucidating and continuing the work of John Hunter, as well as his own researches into Comparative Anatomy and Pathology, showed him to be a worthy successor and interpreter of that great man. Sir R. Owen was moreover one of the most unassuming of men, and the noble dignity of his character was in every way worthy of his fame.

Another Nestor in the history of the Society has been lost by the death of Mr. Edward Cock, F.R.C.S., on the 1st August, 1892, at the mature age of eighty-seven. He was the senior Fellow on the Roll, for he joined the Society in 1832, becoming Vice-President in 1841-1842, and President in 1849. Mr. Cock was a nephew of Sir Astley Cooper, a member also of the Society for several years. His great kindness of heart, and his extensive knowledge and experience as a surgeon, were characteristic features which made him beloved, respected, and esteemed by all. It will probably be for his knowledge of stricture and other urethral disorders, and for suggesting and skilfully practising a system of perineal section that his name will be especially known in the future.

The death of Dr. William Marten Cooke early last year removes one who was a link with the founders of the Society. He was the eldest son of William Cooke, M.D., who took the leading part in the year 1819 in the establishment of the Hunterian Society, of which he was in succession Secretary, Treasurer, and President, retaining an active official connection with it for the long period of fifty years. Dr. W. M. Cooke, who joined the Society in 1839, had retired for some years from practice, when he died in January last at the age of 79 years. He was a frequent member of the Council, and Vice-President in 1851 and 1852.

PETER LODWICK BURCHELL, M.B. Lond., F.R.C.S., who died on July 5th, aged 74 years, was an old and long tried friend of the Society, which he joined in 1848. Dr.

Burchell was a very active member of the Council, served as Vice-President in 1862 and 1863, and Treasurer in 1881. He also delivered the Oration in 1878, and was Librarian from 1873 to 1888. A familiar figure is thus lost from the Society's gatherings, which he attended down to recent years.

MR. ESQUIRE DUKES died on March 15th at the age of 79 years. He joined the Society in 1857, was a member of the Council for many years, and Vice-President in 1867, 1868, 1876, and 1877.

AUGUSTUS HESS, M.D., M.R.C.P., died on 22nd December at the age of 75 years. He joined the Society in 1853, was Vice-President in 1867 and 1868, and occasionally served as a member of the Council; although he held no other official post in the Society, he evinced great interest in its welfare by his frequent attendance at the meetings.

MR. HENRY MOON, who died on the 14th November at the age of 47 years, was well known as a most conscientious and genial member of the Dental Profession. Mr. Moon joined the Society in 1880, and on his return in 1891 from New Zealand, whither he had gone for his failing health, he was elected a Corresponding Fellow.

Particulars of the Society's income and expenditure will be found in the accompanying balance-sheet.

REPORT OF LIBRARY COMMITTEE.

The Committee met at the London Institution on January 25th, 1893, and having examined the Register, Book-case, Books, etc., report:—

That the Register shows that but few Books have been taken out during the past year, although facilities are now afforded to Fellows for having books transmitted by post.

The Book-cases are in good condition.

The Books show signs of damp, and would be all the better for more frequent use,—otherwise they are in excellent condition.

The Catalogue of the Library has been completely revised since the last report of the Sub-committee. A few books were found missing, and many were not included in the old Catalogue.

S. H. APPLEFORD. A. T. DAVIES.

BOOKS ADDED TO THE LIBRARY

OF THE HUNTERIAN SOCIETY, 1892-93.

The following Works have been mostly presented by the Authors or Editors, by the Authorities of the Medical Schools, or in exchange for the Transactions of the Society:—

Index Catalogue to the Library of the Surgeon General's Office, Washington, U.S.A., Vol. XIII., 1892.

Transactions of the Clinical Society, 1892.

Report on the Incubation and Contagiousness of Infectious Diseases, 1892. (Supplement to the Clinical Society's Transactions.)

Pathological Society's Transactions, 1892.

Guy's Hospital Reports, 1892.

St. Bartholomew's Hospital Reports, 1892.

St. Thomas's Hospital Reports, 1892.

The Sei-I-Kwai Medical Journal.

PURCHASED BY THE COUNCIL:-

New Sydenham Society's publications:

- (1) Selected Monographs on Dermatology.
- (2) A Treatise on Gynæcology.—Pozzi., Vol. I. and II.
- (3) Lexicon of Medical Terms, part 19.

REGULATIONS FOR TRANSMISSION OF BOOKS TO FELLOWS FROM THE LIBRARY.

- 1. A Fellow wishing a Library Book sent to him, may order the book by letter to the Assistant Librarian, enclosing six Stamps in pre-payment of carriage and packing.
- 2. The Library attendant will pack and send Books to Fellows, enclosing the usual receipt form in each parcel with the books, and shall receive twopence for each packet so sent.
- 3. To prevent loss, in case of a Fellow forgetting to send back the receipt, the letter requesting the book to be sent shall be kept by the Assistant Librarian, and the Library Attendant shall keep a list of the books packed by him, and of Fellows to whom they have been sent.

HUNTERIAN SOCIETY.

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We, the undersigned, having examined the above Account, together with Vouchers, find a balance due from the Treasurer of forty-five pounds three shillings and eightpence. The funded property of the Society amounts to three hundred pounds Goschens.

January, 1893.

R. CLEMENT LUGAS, JAS. HERBERT STOWERS,

(Signed)

The Hon. Auditors.

THE ANNUAL ORATION, 1893.

BY JOHN SELL E. COTMAN, M.R.C.P., EDIN.

MR. PRESIDENT AND GENTLEMEN,

Before I address myself to the subject of my oration, permit me to thank you for the high honour you have done me in selecting me as your orator for the year. My first thought on receiving the invitation from your good Secretary, Mr. Poland, was one of mistrust of my powers to produce anything worthy of the occasion, and when I looked back along the roll of fame and read the names of the men who have been your orators, my mistrust of my powers deepened. When, however, I further considered the matter and remembered that you, gentlemen, thought me fit for the duty, I felt that I ought not to put it aside. I trust that you will bear with my imperfections and consider that your trust has not been misplaced.

The subject I desire to bring before you is,

PHYSICAL EDUCATION.

In Hunter's day there was not the same need for Physical Education as exists in the present day. The artificiality of our lives has increased, since his time, by leaps and bounds.

In this London of ours it is especially noticeable. Long hours of work, in badly or artificially lighted and badly ventilated rooms, and in cramped positions, hurried meals, and the general rush which seems imperatively necessary now-adays for the successful conduct of business must seriously affect for evil the individual and his descendants.

The Telephone, the Speaking Tube, the Passenger Lift, the arrangements that exist for getting from place to place, omnibuses, trams, trains and so forth, are no doubt great conveniences and save much time, but we must bear in mind this important fact, that by these means the brain gets more than its fair share of work, and the muscular system far less than its fair share.

We, who have in our care the health of the people, who have done so much by insistence upon Sanitation to promote

the comfort and longevity of mankind generally, should, in my opinion, turn our attention, more than we have hitherto

done, to the wide subject of Physical Education.

While not in the least degree discontinuing our attention to matters concerning the health and comfort of the people. we might, I am convinced, add materially to their happiness by directing them to use their physical powers aright, and thus enable them to feel that life was worth living. For what happiness is so great as that of the man or woman in full vigour, one able to run and jump and sing in the very exuberance of joy?

Our training necessarily leads us along the well-worn paths of medicine. Physic for this ailment, physic for that. tablespoonfuls, or may be one, with water, three times a day, and the public whom we serve demand this. "I don't feel very well, and I thought you'd give me a bottle of medicine," if not always uttered by the patient who presents himself, is what, in nine cases out of ten, he thinks and expects of you.

There are some among us who get the length of elegant preparations, but the tendency is all in one direction, viz., putting physic into the stomach and expecting it to afford

relief.

Thanks to our knowledge of medicine, relief is usually afforded, and a symptom is relieved, and our patient is grateful. After a more serious disorder may be a change of air and scene is advised, and here, by experience, we are enabled to select a suitable resort.

But if our patient, yearning for something better—for that ideal life he has read of as the heritage of man—asks us what physical exercise will be best fitted for him, I fear most of us would reply vaguely, and having ascertained what he wished to do, unless it was something outrageous, advise him to do it.

This comes of our training in medicine and our lack of training in physical education.

There is but one medical school in London with a gymnasium, and it, I understand, has no qualified instructor.

Now before we can direct others for their benefit, it is necessary that we should understand the subject practically, and not theoretically only. A knowledge of anatomy and physiology will not help us to distinguish the wide difference between the exercises of fencing and the use of the sceptres. It is not necessary that we should be able to circle the bar, fence, or row, or swim, though it is desirable; but we

should, at least, be familiar with all the exercises, that we

may apply them to the varying need of our patients.

It is of the first, the highest necessity, that a man or a woman should be a good animal. If the body is lacking in culture, of what avail is it to the individual that the mind is cultured? Parents are so apt to forget this. Their pride is to see their children take prizes for intellectual work at school or college. To that end they urge on their children, increase the hours of study and pay to have them coached, in order that they may keep or get in advance of their class fellows. Now this is good, in so far as it does not interfere with bodily culture.

Culture of body must go on side by side with culture of mind, equally apportioned one to the other, if we are to attain to that perfect and harmonious whole "mens sana in corpore sano."

"In corpore sano," what are the great requirements to attain this? Increased breathing capacity and muscular tonicity.

The breathlessness which follows exertion in an untrained man is due to the sudden outpouring of carbonic acid into the blood, which is thereby conveyed to the lung, and demands immediate elimination.

In order that this demand may be complied with it is clearly desirable that the breathing capacity should be developed to its fullest extent.

Incapacity follows disuse as surely in the lungs as in any

other organ of the body.

At first sight, it would seem that exercises of the upper limbs would be best fitted for producing expansion of the chest, and so increasing the capacity of the lungs. It will be found, however, upon a closer examination of the subject, that these exercises act only on the bony framework surrounding the lungs. In a man hanging on a trapeze, e.g., by his hands, it will be found that the raising of the ribs, clavicle, and shoulders which occurs, instead of to that extent increasing the cubic capacity of the chest, drags up the diaphragm. The circumference of the chest is increased, but the lungs are simply carried somewhat higher up.

This is seen also in cases of men entering some of the lower grades of the Civil Service, in whom it is a requirement that the circumference of their chest shall be a certain number of inches. I have known men who, upon examination, have fallen short of this measurement by two inches,

and who have returned in two or three weeks able so to lift their shoulders and ribs as to exceed the required measurement by an inch. This may be called a condition of false development of chest. It is to exercises requiring efforts of speed or strength that we must look for true chest development. The sudden outpouring of carbonic acid which follows such exercises demands an immediate and copious supply of oxygen, and forced inspiration takes place. Parts of the lung which have been lying idle take on action, the air cells therein become expanded, and, supposing the exercise to be continued daily, an enormous increase in chest capacity is obtained. This is a true development, an ascent of ribs and shoulders and a simultaneous descent of diaphragm.

The second great requirement, muscular tonicity, is only to be acquired by suitable exercises taken in correct and rightly proportioned doses. Doses not only proportioned to the individual, but to the varying conditions that individual

passes through in the process of toning up.

Let us now consider for a few minutes the process of combustion, which is continuous so long as life lasts, and is necessary to the production of that heat without which life would cease. It is chiefly a process of oxidation. In this process of combustion man may be likened to a steam engine. Fuel, in the shape of food, is put into the body, and the process of converting it into energy at once commences. Heat is generated and energy is produced. If the fuel be good—i.e., suitable to the furnace and in suitable quantity—the fire burns clearly, there is not more smoke than the funnel (the lungs) can easily get rid of, as carbonic acid, while the kidneys are able to dispose of the cinders as urea.

This is, roughly, the process of food combustion. It would seem, however, that there is, in the animal economy, an arrangement for storing a great part of the energy so produced, or, rather, it is stored up in a form which can be easily and quickly converted into energy. These reserves accumulate chiefly in the form of fat, also as glycogen; probably, also, there are some forms of nitrogenous reserves. When the body is called upon to perform unaccustomed exercise, immediate combustion of these reserves occurs, with the result of setting free an abundance of carbonic acid and non-nitrogenous waste products.

The man, otherwise in perfect health, who does not take sufficient exercise to keep down these reserves, accumulates

them to a considerable extent, and here, again, the analogy to the steam engine comes in—the fuel is bad, the fire smokes, and the lungs have to be used to their utmost to get rid of it. Cinders in considerable quantity are formed in the blood, and have to be eliminated by the kidneys. There comes a time, however, if the exercises be suitably proportioned to the individual, and gradually increased with his increasing adaptability, when the coarse fuel is used up, the fat has disappeared, and consequently the production of carbonic acid is not greater than can be easily got rid of by the lungs. At the same time the muscles, being toned up, have got rid of their superfluous nitrogenous reserves, and the man has his "wind," and his muscles are as the village blacksmith's, "strong as iron bands."

This we know is the case with our voluntary muscles—we can feel them. What has happened simultaneously in those organs which are worked by involuntary agency? It will be found that they have shared in the general toning up. The immediate effect of exercise is to quicken the flow of the blood. Combustion occurs; heat is produced; and the blood, warmed and charged with carbonic acid, finds its way to the heart. Experiments have proved that the presence of carbonic acid in the blood stimulates the heart's action, and the blood is propelled more forcibly to the lungs and the general circulation. If the exercise has been taken in suitable doses it will be found that the heart has increased in size, in thickness of its walls, and consequently in power.

There is no doubt a wide field for enquirers as to the desirability of prescribing physical exercises in cases of heart disease. We are not now on the subject of disease, I therefore refrain from dilating upon the subject, merely remarking that I believe a weak heart can be strengthened by careful exercises just as much as a weak biceps. In valvular diseases we are too apt to forbid exercise and give drugs, forgetting that it is only by suitable, rightly conducted and apportioned exercises that we can hope for that compensatory hypertrophy which our patient needs to enable him to perform the ordinary duties of life with any degree of comfort.

What effect has physical exercise on the brain?

It becomes greatly stimulated by the increased flow of

blood to it, and the increased warmth of the blood.

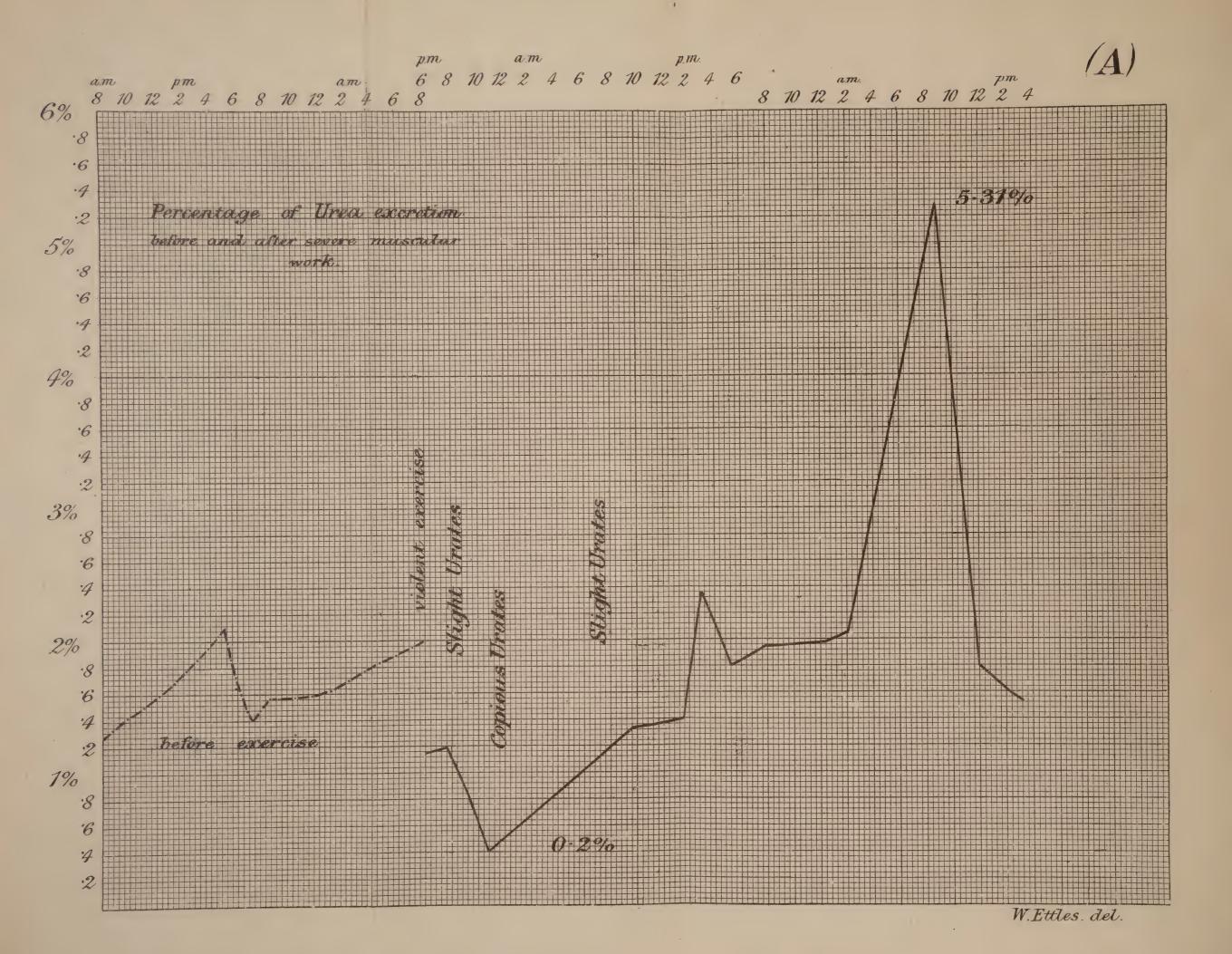
Thinkers must have frequently observed the beneficial effect produced by exercise and the increase of their powers of thought while taking exercise. This stimulation of the

brain and the so-called excitement is truly expressed in the popular phrase of warming up to the work. Perhaps the most striking instances of this occur in the wild dances of the coloured races.

I have seen some of those dances among the Malays at the celebration of "Kalifa." Picture to yourselves a room about 10 feet by 12 feet by about 9 feet high. Men standing one or two deep round the walls save in one corner, where squatted on the ground are three or four men making unearthly noises as of scraping and knocking, and in front of them on an iron plate some incense burning. Presently one of the men steps forward and begins slowly to divest himself of his clothing, slowly, almost unwillingly, as though he were loth to begin. When he is stripped, and a small handkerchief tied round his loins, a large curved knife is handed to him and he begins to chant and sway, and holding the knife aloft plunges it downwards as though it were going through his belly and coming out at his back, but at the same moment the belly is retracted and the shoulders bowed down. This is repeated again and again dozens of times, first with one hand, then with the other, then with both hands holding the knife, and is accompanied by the most violent flexions and extensions of the body, steadily increasing in rapidity and violence till the brain refuses to send further stimuli, and the man falls back from sheer exhaustion of nerve force and lies like a log on the floor. This is a condition of actual auto-intoxication. It is seen in a lesser degree in girls dancing. In a horse, after five minutes' good gallop, how difficult it is to restrain him, and were he permitted, he would gallop till he dropped. So much for the effect, then, of exercise on the brain.

The impression seems to be general that physical exercises do not exercise the brain. This is true of certain exercises which are performed more or less automatically, as, for example, walking, but even walking exercises the brain of a child who has not yet learned to walk. Witness a man at a new exercise with clubs or on the bar, and his brain is all attention till he has accomplished what he has been trying, and by practice the exercise has become automatic. There are some exercises, however, which can never become automatic, notably fencing. We must then acknowledge that the brain is an important factor in the performance of voluntary muscular movements, and that it is not exclusively the privilege of the so-called intellectual occupations to work the brain.





Muscular fatigue and stiffness following exercise are said by Dr. Lagrange to be due to an auto-intoxication, a poisoning of the system by the waste products of combustion, just as breathlessness is caused by the presence of carbonic acid.

We know that the amount of fatigue and stiffness which follows exercise depends upon the amount of work done and the fitness or unfitness of the muscles employed to do it. I believe Dr. Lagrange's theory to be correct as long as the reserves last and speedy combustion occurs. Till these reserves are used up we have, in the urine passed after exercise, a copious deposit of urates. When a man is out of condition he has stored up a large amount of reserves, and a large deposit of urates takes place after what might be termed moderate exercise. As he by continued exercise uses up those reserves, the deposit of urates becomes less and less till it ceases.

During the first stages of the above process the muscles themselves become fatigued, stiff and tender to the touch, and a general febrile condition often occurs.

As the reserves get used up and the deposition of urates becomes less, the fatigue and stiffness and tenderness of the muscles disappear. We know that urea is the ultimate product of the complete oxidation of nitrogenous waste products.

May we not take it that this deposition of urates and the consequent fatigue and stiffness is due to incomplete oxidation of this nitrogenous waste? In consequence of the abundance of fuel put on the fire it has been incompletely burned. The smoke, carbonic acid, has been so abundant that it has not left sufficient oxygen to complete the combustion of the nitrogenous elements, and you have as a resultant, not urea but urates. Up to quite a recent date this was my theory only. I am now, however, able to demonstrate by means of chart (A) that the theory is correct.

The first curve (the interrupted line) shows the percentage of urea occurring in the urine of a man in fair condition doing his usual daily work, and taken for purposes of estimation every two hours during twenty-four hours.

The second curve shows the same in the same man for a period of forty-eight hours who had, for a period of two hours immediately preceding, taken very violent exercise—rope climbing, fencing, vaulting horse, trapeze, and barwork. You will note that the percentage of urea immediately begins to fall, but you will note also slight urates, copious urates,

and, again, slight urates, as occurring during the period when the percentage of urea was at its lowest. Further, you will note the enormous rise in the percentage of urea on the second day. This will account for the difference of opinion expressed by observers as to the percentage of urea in the urine after exercise, who have contradicted one another, one asserting that he found an increase, another that he found a decrease. Each is right in his finding. Unaccustomed exercise does cause first a diminution in the percentage of urea secreted, which reaches its minimum in two hours, continues below the normal for twelve hours, and gradually increasing its percentage, reaches its highest point thirty-six hours after.

When the reserves have been burnt up, another factor in the causation of fatigue and stiffness appears. My attention was directed to it by reading a paper by Sir James Paget on local periostitis, which occurs at the insertions of muscles.

The muscles of the trained man have become "strong as iron bands," and pull with an unaccustomed force upon their insertion. If such a man perform an exercise of prolonged muscular tension he invariably refers the pain to the insertion of the muscle he is putting the strain on. Take as an example two men, one in condition, the other out of condition, and get them to hold out an arm each at right angles to the body. The man in condition will be obliged to drop his arm in ten or twelve minutes in consequence of pain in the humerus at the insertion of the deltoid, which pain will continue localised for an appreciable time, but he will have no pain in the muscle itself. The man out of condition will, in about six minutes, feel the belly of the muscle getting hot, and he will drop his arm because of pain in the muscle itself, and the muscle will be tender for some time after.

We have here two distinct factors which may in some cases join issue, but observation leads me to believe that the less the muscle is trained the more will that muscle feel the tension, and the more it is trained the less will it feel the tension in itself, but prolonged tension will produce pain at its insertion.

We will now for a moment consider some of the exercises best suited for the varying needs of the individual. Any exercise should be begun cautiously. To one unaccustomed to it, it is an untried remedy and should be taken first in small doses to see how it agrees. If the small doses agree they can be gradually increased with advantage, and exercise, as an intoxicant, here shows its likeness to more familiar intoxicants. As a man gets accustomed to it he must take it in much larger quantities to produce any effect, till bye and bye he becomes a regular toper, but there is this to be said in favour of exercise as compared with alcohol, though a man may be able by habituation to take a large quantity, he does not have a headache in the morning. If a man be forty, and a brain-worker, the more automatic the exercise he takes the better. Walking is the best form it can take. A man who lives two or three miles from his office should give up cabs or omnibuses and walk at first one way, say for the first week, and then both ways to and from the office. He would find that while in point of time he lost very little, in point of health he would gain very much.

He should also use dumb-bells or clubs three times a week

for half an hour each time.

Take another type, the plethoric man, the man who in spite of some physical exercise remains out of condition, who sweats profusely and becomes speedily breathless upon exertion. Walking exercise is good for such a man, and if after a time his condition improves sufficiently to permit of it, running will do him good also, but added to this, fencing is the best of all exercises for him (it does not follow that he is good for fencing). After a good bout with the foils, he will feel as if he had done a hard day's work mentally and physically. Fencing requires a power of extremely rapid muscular co-ordination, and brain and spinal cord are taxed to the utmost.

In these two types, I have had in my mind men who have passed the meridian of life, and in whom there has been a lack of physical education; men who are not fitted for and would scarcely care to join a gymnasium. Such men may immensely improve their condition by following the exercises I have described, but they can never make up for the valuable time they have lost, they can never acquire the suppleness of body and limb which belongs to the man who began twenty years sooner.

Now let us turn our attention to the gymnasium. The competence of the instructor is a point of the utmost importance. A gymnasium with an incompetent instructor may be compared to a piano played with one finger. Until quite recently, there has been no recognised body to take in hand this important question. In the founding of the

British College of Physical Education we have a step in the right direction. They purpose holding examinations and granting diplomas to those who at the examinations shall show themselves efficient. The first grade will be licentiates, and this is intended for schoolmasters and others who may wish to give the children under their care some physical training. A higher grade, to be called members, will be subjected to a much stiffer examination, which includes Anatomy, Physiology, Hygiene and Anthropometry, in addition to practical work. These are they who will be competent to take any class in any gymnasium, and it is intended for those who will confine themselves entirely to this work. There is yet another grade, to which gentlemen interested in the work are elected, and when so elected are Associates.

Let us suppose that we have the gymnasium and the

competent instructor.

Who are we to send there?

I reply confidently that every human being from school age to the age of twenty-five will be benefited by the instruction they will there receive, and the exercises they will there perform. Girls and boys, men and women, are not, I maintain, capable judges of their own physical condition. I will illustrate my meaning thus. In our daily round of visits, we accidentally come across (we shall certainly find them if we look for them) boys and girls in whom physical unfitness is very apparent. Upon inquiry they will express themselves as well as ever they were; they don't feel ill, they get about their daily duties, they can eat and sleep, and all their functions are efficiently performed. Enquiry of their parents elicits the remark that they have never been over strong, but have never ailed anything, never wanted any doctoring, nor do they; but they do want physical exercise.

A man told me not long ago that he had been born tired and had been tired ever since. I fancy he meant it as a joke. It was no joke for him that his physical condition had been so overlooked, so neglected in his boyhood, as to pass him through life with an imperfectly developed muscular system, and consequently as a tired man. Yet he accepted the condition without a murmur. He had never been strong, and it had never entered his head that his condition might have been improved by physical exercise.

Even those who feel well and look well will feel better and look better for a course of physical exercise such as they would get at a well-conducted gymnasium. If we are not to leave even "well" alone, what are we to do with the boy or girl who is weakly and narrow-chested, whose spine, may be, is not quite straight, whose shoulders are not quite level, and whose left and right shoulder pull, and hand grip differ, perhaps to the extent of 10 or 20 lbs.? These require more careful supervision at first, but six months of what are called ground exercises, as mass drill, the running maize, dumb-bell and bar-bell exercises, will straighten many a crooked spine and widen many a narrow chest, and enable those who have got rid of them to go in for the more advanced exercises on the apparatus, the horizontal and parallel bars, the vaulting horse, and the various rings, ropes, and ladders found in a

gymnasium.

Suppose the lad have valvular disease of the heart or a weak irritable heart, with attacks of palpitation. In the latter case we may reasonably infer some aberration of the sexual sense, as it is termed by our Gallic confrères. Now for the correction of this aberration there is nothing like physical exercise. Physical exercise causes a marked diminution in the sexual appetite. We shall therefore by suitable exercise abolish the heart trouble. In valvular disease we cannot hope to do this, but by suitable exercises we can improve the condition of the heart muscle, get increased thickness of the ventricular walls, and so prevent what is to be so greatly dreaded in these cases, dilatation. The exercises suitable beyond all others for one suffering with valvular disease of the heart are sceptres, or very light clubs, not more than two pounds each in weight. Some ground exercises are also good. Exercises of speed or of great muscular effort must be absolutely forbidden. The general caution should be given that any exercise which causes distress of the lungs or heart should be temporarily abandoned.

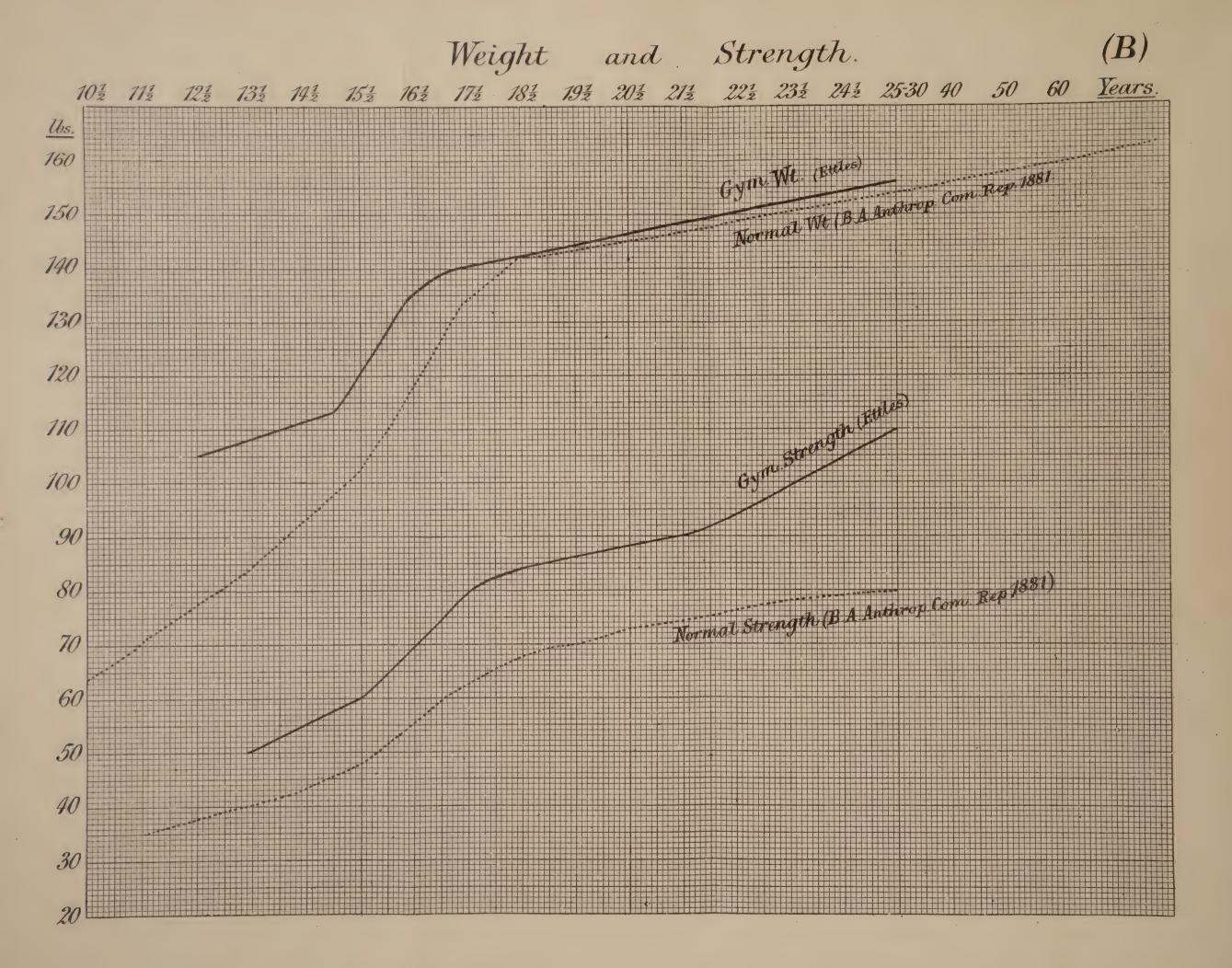
Here and there in this paper I have used the term "man" for the sake of convenience. You must take it in its larger sense as including woman. Women are just as much animals as men—not, perhaps, quite so much of the earth, earthy—but built up as men with muscle and bone and nerve, which ought to receive the most careful culture to fit them for their duties as mothers of the coming race. Girls nowadays put on "the woman" at too early an age. A girl just entering her "teens" is surprised if you advise her to skip half-anhour a day; she says she is too old for childish games, and a hoop she has quite grown out of. Skipping is the most

health-giving exercise a girl can indulge in. A girl who skips regularly right through her "teens" will be more likely to have a good figure and a well-poised head, a straight spine, and a good pelvis, than one who disdains such "childish" exercises. Happily for the race, delicacy of appearance and appetite are going out of fashion. Ground exercises are good for girls, and they seem to enjoy the vaulting horse. Fencing is splendid exercise for girls, and some become very proficient at it. I think girls would take more to fencing if they could have their breasts protected from the point of the foil. I would suggest the wearing of a vulcanite or celluloid covering shaped like a shallow basin and fitting on each breast.

Whilst working up the vexed question of percentage of urea, the question of ureameters came to the front, and Dr. Ettles has devised an instrument upon which all our observations have been made. It is exceedingly simple in its action, and is designed specially with a view to the conduction of a prolonged series of observations. I find it excels all others in accuracy of registration and working speed. It consists of two portions, the generator and the receiver. The generator is this small part clamped to the side of the larger, which is the receiver. The generator consists of two superposed cylinders. The upper and smaller is furnished with a thistle bulb and stopcock, and it communicates with the lower by means of an intervening cock. The lower and larger cylinder communicates with the cylinder above, and has also a stopcock by which it can be emptied. The receiver consists of a U tube, one limb of which is graduated and closed at the top by a three-way stopcock; the other limb is open. To use the apparatus, you first fill both limbs of the receiver with water, and leave open the stopcock communicating with the graduated limb. Open all the taps in the generator but the bottom one, and pour in, by means of the thistle bulb, the solution you purpose using. We started with Sodium Hypobromite, but gave it up in favour of Sodium Hypochlorite.

Your lower cylinder being half full of the solution, say 50 c.c. Hypochlorite, now turn the tap closing the connection with the upper cylinder and into that upper cylinder pour your urine 5 c.c., close the upper tap and opening the tap between the two cylinders, allow the urine to pass into the lower cylinder and mix with the solution. If urea be present nitrogen is speedily evolved, and passes by means of a tube







leading from the shoulder of the cylinder into the graduated limb of the receiver.

In order to test thoroughly the effect of physical exercise on the individual, I have had a series of observations made for me by Dr. Ettles to compare with a series published by the British Association in 1881. The British Association chart was prepared after prolonged and careful investigation by the Anthropometrical Committee, and gives the mean weight, height, chest measurement and shoulder-pull of Englishmen.

In the first two charts here shown, the normal or B.A. curves are given as dotted lines, and what we will call the

gymnastic curves by uninterrupted lines.

Weight and strength (shoulder pull), are shown on chart (B). In the weight curves it will be noticed that there is a wide difference between the normal and the gymnastic curves at the beginning. Starting at $12\frac{1}{2}$ years, the gymnastic curve shows 27 lbs. more than the normal. This probably means that the lads joining a gymnasium are above the average in physique. Six years later, however (at $18\frac{1}{2}$), the curves join, and from then to 30 the gymnastic curve increases more quickly than the normal.

In the strength curves, the widest difference is not at the beginning, but at the end. Beginning at $13\frac{1}{2}$ years with a difference of 10 lbs., it ends at 30 years with a difference of 30 lbs., the mean average normal shoulder-pull being but 80 lbs., while the same in the gymnast is 110 lbs., an increase

of 37 per cent.

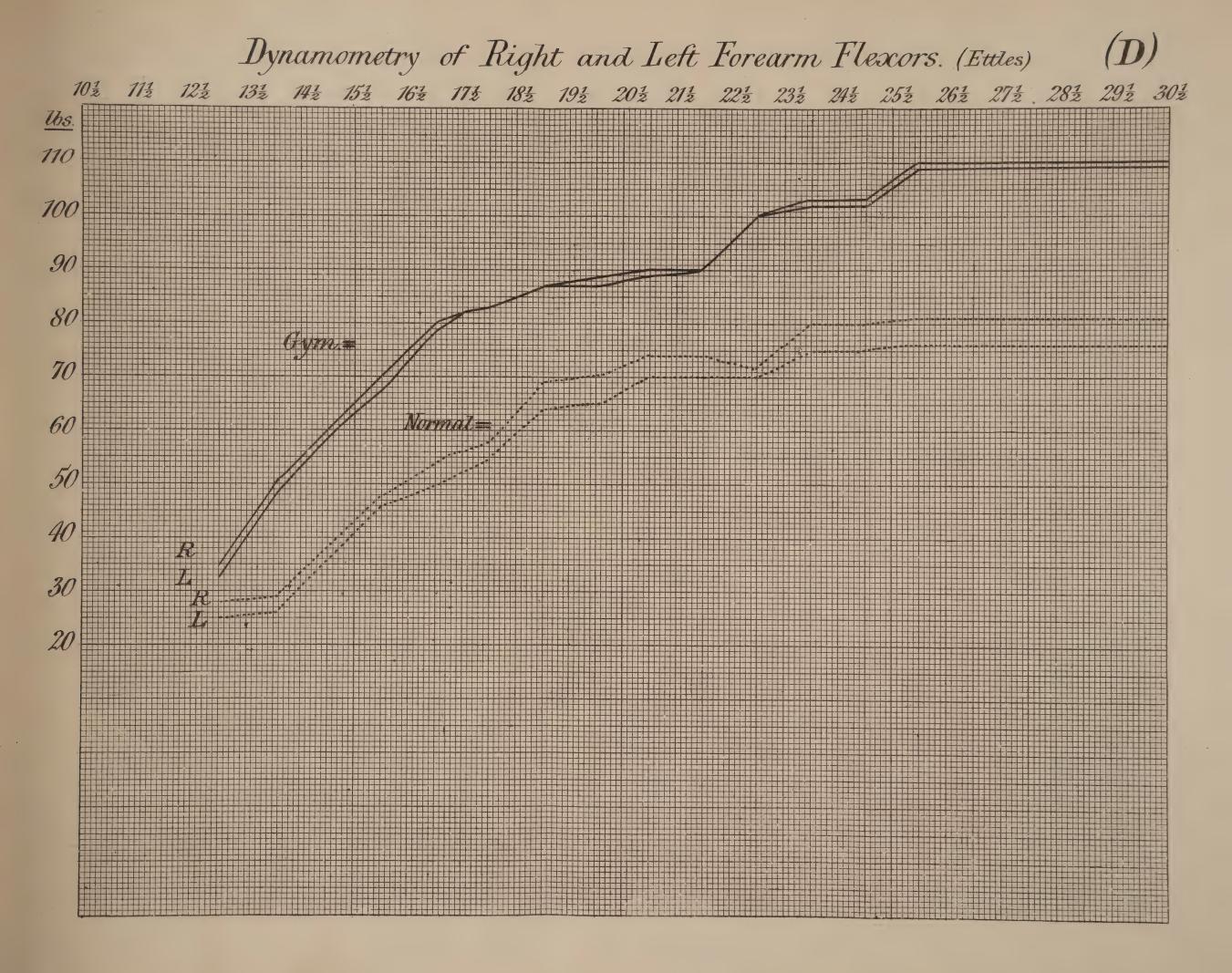
Height and chest girth are shown on chart (C). The gymnastic height curve starts above the normal height curve by $2\frac{1}{2}$ inches. This goes to confirm the supposition which the weight curve suggests, that it is lads of a good physique who seek the gymnasium. A comparison of the two curves shows that in the gymnast there is a steadily continuous growth up till 30, while in the normal (B.A.) the highest point is reached at $19\frac{1}{2}$.

The B.A. curve, showing the chest girth, is taken at full expiration, and in order to make a complete comparison the gymnastic chest girth has been taken at the same moment. It will be at once recognized that this is an unfavourable one for the gymnast. If we had before us a normal curve and a gymnastic curve, each at full inspiration, we should

find a much greater difference in the curves.

Chart (D) shows the average strength of the hand-grip in

the ordinary male, as compared with the average of the same in the gymnastic male. Two points are here to be noted. First, the difference in power between the normal hand-grip and the gymnastic hand-grip; and secondly, the equality of power in the right and left hand-grip in the gymnast and the inequality in the same in the ordinary male.





HUNTERIAN SOCIETY.

FEBRUARY 24th, 1892.

MR. F. GORDON BROWN delivered a short address on his first occupancy of the presidential chair.

"Before I call on Dr. Hughlings Jackson to deliver the second Hunterian Society Lecture, allow me to thank the Fellows for electing me as President for the ensuing year. The long list of illustrious names of those who have held this post is a great stimulus to me to put forth my utmost endeavour to carry forward the work in the same energetic manner, whilst I personally feel much diffidence on account of the inability of one in very active work to keep pace with the ever-increasing strides of modern medicine, and with the tremendous growth of medical literature both at home and abroad during the past few years. But I feel sure I can reckon on the kind indulgence of the Fellows, and the support and co-operation of the Council, as well as upon our energetic Secretaries, and I trust, with your help, we shall have both attractive and profitable meetings and useful discussions during my year of office.

"In the last twelve months most of us, from the highest in the land to the lowest, have suffered some grave and irreparable loss; the recent Influenza epidemic has committed great havoc directly and indirectly in all classes of society, but I am happy to congratulate the Fellows of the Hunterian Society, many of whom have been especially exposed, on having escaped the more serious results of the malady.

"Our death-roll of the past year has, fortunately, not been large; still we have to deplore the erasure of two well-known and highly respected names from the list of Fellows. Sir James Risdon Bennett was a former President of this Society, and was also elected to the high and responsible position of President to the Royal College of Physicians, which he held

for five years. He will long be remembered for his earnest, impressive, and dignified manner, which gained for him the esteem of all who knew him; he spoke forcibly and fearlessly; his words came forth in a clear and incisive way, which gave his hearers the impression that he had read much, and accurately thought out what he uttered; his judgment was sound and unwavering. I well remember his clinical teaching in the wards of St. Thomas's Hospital. Though reserved, he was kind and considerate to the poor, and ready and willing to give all the instruction possible to his class; the junior offices under him were eagerly competed for in my time, and held by the best men of each year, a sign of the great esteem in which he was held as a teacher.

"Dr. H. G. Sutton was a man of an altogether different stamp. Gentle and amiable in all his social relationships, he was beloved by those who knew him intimately; he possessed a philosophical and contemplative mind; those who were in the habit of going round the wards with him used to be astonished at his marvellous diagnostic power, and the way in which he would form a sound opinion on the case by simply inspecting the external appearance of the patient, and, what was, perhaps, more remarkable, he would frequently correct a diagnosis given in the ward by just looking at the dead body lying on the post-mortem table. His paper on the morbid anatomy of Cholera which was printed in full in the Annual Report of the Medical Officer of Health to the Privy Council, is still, and, probably, always will be, referred to as the most accurate, exhaustive, and careful description which we possess of the post-morten appearances of that disease, whilst his papers on the study of the changes in the kidneys and other organs in cases of chronic Bright's disease, with their effect on the circulation, will hand down his name to posterity as one of the leading history-makers in medicine. The many hours, often extending to early morning, spent in the Pathological Laboratory of the London Hospital, contributed not a little to the premature failure of Dr. Sutton's health, and this acted as an additional inducement to him to seek partial retirement in the country, where

he passed many an hour in solitary evening walks, listening to the soothing sounds of nature, the impress of which is shewn in his work on medical pathology, where he records how much he was indebted to nature for guidance, and how he enjoyed allowing her to guide him.

"One other name I must mention, a man not so well known to us, as he resided far from this city. Richard Middlemore, Surgeon to the Birmingham Eye Hospital, was a corresponding Fellow of this Society; as early as the year 1831 he took the Jacksonian Prize for a 'Treatise on the removal of Capsular Cataract through the Sclerotic by needle forceps.'

"Such men as these we are proud of; they are worthy to be added to the roll of glorious names always to be found in the annals of the Hunterian Society,—Travers, Billing, Aston Key, Bright, Hilton, Gull, Peacock, and many others, culminating in the one great name we reverence, that of John Hunter himself, who raised surgery to a science, and made modern medicine possible, and whose spirit of scientific investigation permeates all classes of our profession down to the present time. We, as a Society named after him, are constantly seeking new paths of knowledge and usefulness.

"When our Society was first formed only papers were read; a Library was next added; in more recent years clinical and pathological evenings have been inaugurated; and last year, under the presidency of Dr. Stephen Mackenzie, the Hunterian Society Lectures were instituted, two of which it is proposed to have delivered each year. The Fellows have already had the pleasure of hearing Mr. Jonathan Hutchinson when he delivered the first lecture for this session on Partnership in Disease. To listen to Dr. Hughlings Jackson as he delivers the second lecture is our object to-night, and I now have great pleasure in calling upon him for his discourse on 'Neurological Fragments.'"

DR. HUGHLINGS JACKSON then delivered the first Hunterian Society Lecture of the Session, entitled "Neurological Fragments." (The lecture is published in full in

The Lancet, 1892, vol. i., p. 511, and British Medical Journal, 1892, vol. i., p. 487.)

MARCH 9th, 1892.—Pathological Evening. SUBDURAL HÆMORRHAGE OF THE BRAIN.

Specimen shown by Mr. T. H. Openshaw.

The specimen was taken from a man, aged 60, who fell from a cart while in motion. He walked into the hospital, and there exhibited considerable violence in his manner, and was with difficulty persuaded to stay in. He had a scalp wound about two inches in length on the left side of the occipital bone, and profuse hæmorrhage from the left ear. After admission he became more and more unconscious and very restless. Two hours later it was noticed that his pupils were equal and moderately dilated, reacting to light, there was no paralysis, and consciousness was still not wholly lost. Twelve hours later there were still no paralysis and no asymmetrical phenomena. Twenty-four hours after admission there was complete paralysis of the left arm and leg, and incessant movement of the right limbs, the right pupil was dilated and did not react to light, and some subconjunctival hæmorrhage was beginning to show itself on the right side. The right internal rectus was noticed to be paralysed. The knee-jerks were obtainable, but the superficial reflexes were sluggish; there was no ankle-clonus. About twenty-six hours after admission hæmorrhage also appeared beneath the left conjunctiva, stertorous breathing set in, and coma rapidly supervened. Diagnosing fracture of the base with rupture of the middle meningeal artery, Mr. Openshaw, without an anæsthetic, proceeded to trephine on the right side of the skull. The middle meningeal artery was found to be intact, but as the dura mater was bulged and did not pulsate, it was incised, and beneath, a mass of blood-clot was found, some of which was removed, but Mr. Openshaw did not consider he was justified (considering the patient's condition) in proceeding further. After the operation the pulse and respiration improved considerably, and some power of movement returned, but he sank twelve hours later. At the autopsy a large clot two and a half inches thick was found in the middle fossa on the right side, beneath the dura mater; on the left side the petrous portion of the temporal bone was fractured, but no artery of size seemed to be wounded. Mr. Openshaw remarked that had he to repeat the operation under similar circumstances he would remove a larger piece of bone, and more completely clear out the clot.

Dr. Turner suspected that the bleeding on the opposite side to the blow must have arisen from contusion of the brain, and he had rarely seen so much blood effused from contrecoup. He remarked that there was an interesting specimen in the London Hospital Museum, showing an extra-dural clot on the side of the blow and a subdural one on the opposite side.

MALIGNANT STRICTURE WITH ULCERATION OF THE LOWER BOWEL.

Specimen exhibited by Dr. Turner.

The patient, a man aged fifty-eight, began to complain thirteen weeks before admission of paroxysmal abdominal pain increasing in severity, and accompanied by diarrhea and flatulence. After admission the pain diminished, and the diarrhea gave way to obstinate constipation, associated with tympanites. The death scene was ushered in by severe pain and tenderness over the abdomen. No tumour was detected during life. Towards the close some pus was found in the urine. The specimen shewed an annular growth at the convexity of the loop of the sigmoid flexure, the flexure was adherent to the rectum, and communicated with it by a perforation through the growth: the appendix cæci and omentum were also adherent to the flexure in the neighbourhood of this perforation, and the tip of the appendix was invaded and perforated also by the growth: in the hepatic flexure was found an elevated non-ulcerated nodule of growth; and in the transverse colon was found a perforation surrounded by an elevated ring of growth. These two nodules seem to have arisen by infection from the appendix cæci, and thus indirectly from the primary growth in the sigmoid flexure. The colon and cæcum contained much gas and soft fæces, and the latter was much distended. The ascending colon was bent on itself a little above the cæcum, with adhesions to the adjacent surfaces, and behind it in the loin was a fæcal abscess, communicating with the lower end of the colon by an opening, which had the appearance of having resulted by perforation from without. The peritoneum was extremely distended with gas, and contained some feculent fluid. The heart was firmly contracted, and the lungs congested, condensed and compressed, and nearly airless.

Dr. Fred. J. Smith asked Dr. Turner if he had met with malignant disease in the gut amongst children, as he possessed a specimen removed from a child of four years of age.

Dr. Turner replied that the earliest case he knew of occurred at the age of 22.

GANGRENE OF THE LUNG RESULTING FROM THE PRESSURE OF AN ANEURYSM.

Specimen shewn by Dr. Arnold Chaplin.

The specimen was taken from a man aged 42, a stevedore; he had previously enjoyed good health, except for a winter cough of some years' duration. For three months previous to admission to Victoria Park Hospital he complained of cough, expectoration, and pain in the chest; he had also a slight attack of hæmoptysis. On admission, nothing was detected beyond bronchitis. Persistent pain, unrelieved even by morphia, first aroused suspicion that something more was present besides bronchitis. Dulness to the left of the spine between it and the scapula, a systolic bruit to the left of the sternum, and a decided weakening of the left pulse, pointed to the presence of an aneurysm. Paralysis of the left vocal cord and a brassy cough corroborated this evidence. The temperature became elevated; râles over the left lung, followed later by amphoric breathing and fetid expectoration, shewed that gangrene of the lung had supervened, and he sank nine weeks after admission. At the necropsy a large

aneurysm was found springing from the transverse arch of the aorta, pressing upon and almost occluding the left bronchus; the left sub-clavian was involved, but the carotid had escaped. A large gangrenous cavity was found in the upper part of the left lung. Dr. Chaplin remarked that it was probably from pressure on the bronchus, with aspiration of foreign bodies, and from pressure on the pulmonary plexus of the pneumogastric, that the gangrene had occurred, but he attributed the major share in the result to trophic changes from the pressure on the nerves.

ULCERATION AND PERFORATION OF A BRONCHUS FROM PRESSURE OF ENLARGED GLANDS.

Specimen shewn by Dr. Chaplin.

The specimen was taken from a man aged 45 admitted to Victoria Park Hospital complaining of dyspnæa and palpi-There was evidence of Bronchitis over both lungs and of a ortic and mitral disease. He improved by his stay in Hospital and was discharged, but returned in six or eight months' time with the same symptoms much exaggerated. There was orthopnæa, and very loud inspiratory and expiratory stridor. He died somewhat suddenly five days later. At the autopsy the lungs were found collapsed and airless in parts, and at the roots the bronchial glands were found very much enlarged: they had encircled and almost obliterated the lumen of the left bronchus, which was nearly filled with inspissated mucus. In the right bronchus about an inch down was a large irregular ulcer with ragged edges and a perforation in its base, through which a gland protruded. The aorta was found dilated, as had been suspected during life. The microscopical examination shewed that the enlargement of the glands was due to simple imflammatory hypertrophy.

THE PRESIDENT asked with regard to the first specimen whether the bronchial arteries were obliterated or whether Dr. Chaplin had simply been unable to find them.

DR. FRED. J. SMITH remarked that the second specimen was typical of the manner in which total occlusion during life was compatible with

a free passage on post-mortem examination: he preferred also to believe that the gangrene of the lung was due to obliteration of the blood supply to the part in association with the aspiration of septic particles rather than to trophic influences through pressure on the pulmonary

plexus.

Dr. Turner asked if syphilis were possibly present in the second case, as the bronchial ulceration was very like that which occurs in syphilitic pulmonary disease, remarking that the glands were quite fibrous, and shewed no acute inflammatory changes with suppuration, such as were usual when a gland ulcerated into a bronchus. With regard to the gangrene of the lung he was aware, of course, of the occurrence of cases in which it seemed to arise from pure trophic disturbances due to nerve destruction, but thought that here septic trouble arose from aspirated particles.

Dr. Glover Lyon saw the second specimen removed from the body, and was glad that it had been brought before the Society. It gave, he said, an idea as to the diagnosis of certain cases during life, and he quoted one he had recently seen where there was great distress of breathing, and the only abnormal sign was the absence of breath sounds in the lower third of the left lung in front: such a condition, he remarked, might well be due to pressure of an enlarged gland upon a bronchus, and, as happened in his case, might disappear when the glandular swelling subsided.

Dr. A. T. Davies had seen a very similar case to the second one: the patient, a woman, died very suddenly a few hours after admission to the City Road Chest Hospital, and at the post-mortem it was found that a gland had ulcerated into and occluded a main bronchus. With regard to the gangrene of the lung, he quoted Dr. Wilson Fox as believing that absence of movement in the part predisposed to its death, and then septic aspiration started the gangrenous process.

Dr. Chaplin replied that the bronchial arteries were quite obliterated, and said that he believed there were three factors in the production of the gangrene, (1) pressure on the bronchus, (2) obliteration of arterial blood supply, (3) nervous trophic disturbances. In reply to Dr. Turner, he said that both during life and after death syphilis was most carefully enquired for and searched for, but no evidence or trace of it could be found, unless the bronchial ulceration be assumed to be such.

EXTENSIVE EPITHELIOMATOUS GROWTH ARISING IN OLD ULCERATED AND CICATRICIAL TISSUE.

Case shewn by Mr. John Poland.

The specimen was taken from a man aged 35, who 30 years previously was run over by a dray, and nearly all the soft parts of the thigh were stripped from the bone; for about three years he was treated at Guy's Hospital under Mr. Cock, after which time the remaining sore was only the size

of a penny piece. It seemed to have quite healed up 15 years ago, but only for a short period. Two years ago the sore became larger and spread rapidly, becoming very vascular and bleeding profusely at each dressing. On admission to the Miller Hospital the whole antero-external aspect of the thigh from near the trochanter to the knee was occupied by a granulating vascular surface; the surface was elevated into irregular hillocks, with sinuses between leading down to the bone, and the whole of the soft structures on the outer side of the thigh were bound tightly together by cicatricial The femoral and inguinal glands were enlarged. Considering the fetid discharge and the profuse hæmorrhage which appeared to be threatening the patient's life, it was decided to remove the limb, although it was known that the disease extended beyond the limits of surgical interference. The operation was performed by a modified Furneaux Jordan method. The wound healed rapidly, and two months later a mass of glands were removed from Scarpa's triangle. Rapid recurrence, however, as was expected, took place, and the patient died 12 months after leaving the hospital. examining the limb, all the muscles and soft parts on the outer side of the thigh were found atrophied, and bound together by cicatricial tissue, and infiltrated with a white tough growth which extended down to the bone, involving the periosteum extensively both upwards and downwards. Microscopically the growth was typically epitheliomatous, with numerous cell nests both in the primary mass and in the lymphatic glands. Mr. Poland remarked that the case was one of exceedingly slow development, and that it emphasized in a remarkable manner the influence of chronic irritation as the chief factor in the production of epithelioma at this early age. He said he had seen epithelioma on the lip fatal at the age of 28. There was no history of cancer in the family, and he felt sure that heredity played but a small part in the production of many forms of cancer, at any rate when of epitheliomatous type.

DR. FRED. J. SMITH remarked that it was an important point to ascertain whether the wound ever healed completely or not, for if it did

heal completely the fact pointed to mal-nutrition as a factor in cancerous production; if, on the other hand, it did not heal, then the cancer arose from a more active process of over-irritation.

Dr. Burton Brown said that in India he saw many cases of epithelioma of the thigh arising in the sears of burns, due to a habit of the natives of putting vessels of glowing coals under their dress for warmth.

Mr. RIVINGTON could not recall a case of epithelioma of the thigh, though he had seen many in the leg from chronic ulceration.

Dr. Turner mentioned a case arising in a man through a scald from boiling water, and drew attention to the fact that the epitheliomatous growth existed only in islands, as it were, in the midst of large areas of granulation tissue, and suggested that this was due to the granuloma destroying the epithelioma except in patches.

THE PRESIDENT remarked that this patchy condition of the malignant growth was not uncommon in chimney sweep's cancer.

Mr. Openshaw asked Mr. Poland if he would have considered himself justified in clearing out the glands from the pelvis by an incision similar to one for tying the External Iliac Artery.

Mr. Poland, in replying, said that he thought the sore had never healed, so that the growth was probably due to irritation and not malnutrition: he had noticed the islets of cancer in an area of granulation tissue, but offered no explanation of this occurrence: he thought the age of the patient very unusual, but drew attention to (1) the long continuance of the irritation, and (2) the very nervous temperament of the individual. In answer to Mr. Openshaw, he said that he would consider it justifiable to clear out the pelvis in certain cases.

ANEURYSM OF THE FIRST PART OF THE AORTA.

Specimen exhibited by the President for Dr. Appleford.

No history was obtained with it, except that the aneurysm had perforated the trachea.

DR FRED. J. SMITH remarked that the specimen was one more illustration of the fact that an aneurysm of the aorta had per se no tendency to cause hypertrophy or dilatation of the heart. He was convinced that statements in text-books were wrong when stating that hypertrophy and dilatation were symptoms of an aneurysm; if the aortic valves were affected then the cardiac affection resulted from that, but if not Dr. Smith maintained that the heart, unless affected by general arterial changes, remained undisordered.

Dr. A. Davies said that in the Hunterian Library was a thesis for the Cambridge M.B., also proving Dr. Smith's statement by an analysis of a large number of cases.

FÆTUS COMPRESSUS.

Specimen shown by the President.

The specimen was obtained from a six-parous woman; the other twin was of normal weight and development; the placentæ were quite separate.

MARCH 23rd, 1892.

THE TREATMENT OF COMPRESSION PARAPLEGIA FOLLOWING POTT'S DISEASE.

Paper read by Mr. A. H. Tubby.

This subject has lately received considerable attention on account of the bold surgical measure employed in certain cases. I allude to laminectomy, a hybrid term, and better replaced by rachiotomy. A paper was read by Mr. W. Arbuthnot Lane, before the Clinical Society, on Oct. 23rd, 1891, detailing 11 cases of laminectomy, in which he claims to have achieved a large amount of success. In fact, he is almost inclined to deduce the conclusion that "such cases could not have recovered from the paraplegic condition without interference." I had the good fortune to be present on the first occasion when laminectomy was performed by him. Being then on duty in the wards of Guy's Hospital I had opportunities of noting the rapid and remarkable improvement in this case as far as motion and sensation were concerned.

Since I have worked at the National Orthopædic Hospital I have been struck by the number of cases, partially or completely paraplegic on admission, which have left the Hospital able to walk, after prolonged rest in bed, and treatment by extension, by Fisher's bed-frame and Ernst's couch, or simply by a collar taking its fixed points from the occiput and chin, with a weight attached. The counter-extension is provided by the weight of the body, and raising the head of the bed.

I have recently had a case in point under my care at the Hospital, and I now give a brief outline of it:—

J. H. F., et. 5, was admitted on Jan. 5th. The back had "grown out" two-and-a-half years previously. The mother could give no further details. On admission the child is pale and weakly, and entirely unable to walk. There is a large posterior curvature in the dorsal region, extending from the seventh dorsal to the first lumbar vertebra. There is loss of sensation to touch from the ninth rib downwards on both sides, but he feels the point of a pin very slightly. As he lies in bed, the legs are extended and rigid, somewhat adducted, with considerable spasm of the adductors, and muscular wasting. He can move the legs slightly, making some attempts at flexion and rotation. The knee reflexes are present but exaggerated. There is some incontinence of fæces when the motions are loose, and imperfect control over the bladder; he must relieve himself directly he feels the desire during the daytime; and at night he passes water in his sleep. Temperature normal. He was placed in bed with the extension collar fitted beneath the occiput and chin, and the head of the bed raised three inches. It was noted on the child sitting up in bed, and applying one hand over the lower part of the sternum, and pressing with the other firmly over the prominence behind, that there was considerable yielding in the spinal column.

On Jan. 26th the spine felt more consolidated, but there was no improvement in the bladder symptoms, or in muscular power.

Feb. 11th.—Better movement in legs; is now sensitive to touch on both sides below ninth intercostal space.

Mar. 16th.—Can flex knees and ankles fully, and raise the legs about two inches off the bed. The urine does not escape so freely, and the fæces are completely retained. The improvement continued, and the general health mended very considerably, while the legs continued to gain muscular power, and the left leg more than the right, but the spasm of the adductors still continued.

Jun. 1st.—He attempts to raise himself in bed, and the adductor spasm has nearly disappeared; holds water well, has no incontinence of fæces: and kicks his legs about in bed

with freedom. The spinal column increased in firmness and the child became fatter.

Aug. 31st.—He is frequently seen attempting to sit up, and the back is now quite firm.

Sept. 28th.—He could walk a few tottering steps without support.

Nov. 16th.—He could walk from one end of the ward to the other with slight support.

Dec. 6th.—He could walk alone.

During the last ten weeks he has been allowed up for some hours every day, wearing a poroplastic jacket with a head piece, on the jury-mast principle, but at night the extension apparatus was used.

This is a case similar in detail to many that have been under the care of my colleagues, Messrs. F. R. Fisher and E. Muirhead Little, in which the expectant and extension treatment have been followed with very successful results. I should mention that the extension board designed by Mr. Ernst is frequently used directly the treatment is commenced, and the improvement is very rapid; occasionally it happens that slight movements are regained within fourteen days of admission. There are now two cases under Mr. Little's care in the Hospital, completely paraplegic on admission, recovering power slowly but surely.

It is generally admitted that pressure in the spinal cord in these cases is due, not to the falling in, so to speak, of the bony walls of the spinal canal, but to the inflammatory thickening of the membranes, and the mass of granulation tissue, together with, in severe cases, the formation of an abscess.

The question arises as to what should be done in the way of treatment. Two courses are open, either rachiotomy or the expectant treatment, the former radical, the latter conservative. Let me define what I mean by expectant treatment. If the patient is allowed to get up and go about with a plaster of Paris or poroplastic jacket, without in any way taking off the pressure, due to the weight of the head, from the diseased spine, then paraplegia is almost certain to follow if

the disease be high up. Similarly mere lying in bed without extension can but bring about the same result. On account of the projection behind, lateral decubitus becomes more resorted to than dorsal, as in healthy people lying on one side in bed there is always a tendency to flexion of the spine. How much more in a kyphotic patient lying in bed is the posterior curvature likely to be increased, and is actually increased, as the bodies are gradually eroded and fall together, with the result that paraplegia follows, and the expectant treatment is condemned? So long as there is no check upon this falling together of the bodies, so certain are evil results to follow. But if the spinal column can be maintained in extension, and the patient kept at rest at the same time, then I claim that rachiotomy will be needed in comparatively few cases.

Mr. Lane in his paper points out that in 10 of 11 cases of laminectomy performed by him the cord was compressed by an abscess, and the size and extent of the abscess cavities rendered it impossible for the bodies to ankylose, and for them to become useful without operative interference; that the conditions in fact found at the operation appeared in every case to preclude the possibility of recovery of the spinal column without surgical interference. This not only relieved the compression, but gave the surgeon the opportunity of removing necrotic and diseased bone and of aftertreatment of the cavities. In the discussion which followed, Mr. Davies-Colley quoted a case in which he had performed the operation twice on one patient with no benefit. Bowlby had operated twice with benefit, but there was no pus found. I am inclined to think that the case I have quoted, together with those now recovering in the hospital, and other cases successful and recorded in our case-books, do not warrant the conclusion that every case of paraplegia should be operated on as early as possible, and that treatment by recumbency is bad both in principle and practice.

Let me for a moment compare the two methods in some particulars.

Firstly, as to length of time. There is no doubt that

rachiotomy has the advantage when successful, the duration being measured by weeks, as compared with months when rest and extension are employed.

Secondly, the risk encountered. In the expectant method there is no risk involved if excessive extension be avoided, while in rachiotomy I cannot but think there is considerable possibility of damage to the cord, not to mention the general dissemination of tubercle, which has occurred at least in one case.

Which leaves the stronger vertebral column, one in which two, three, or four laminæ are removed, or one which preserves them? And be it noted that after spinal caries it is the consolidated laminæ, not so much the ankylosed bodies, which limit the deformity. I can only think that rachiotomy removes just those parts, which, if left, will prevent unnecessary flexion, while rest and extension allow the absorption of granulation material and the consolidating of the parts, while retaining the patency of the spinal column.

Rachiotomy may claim the distinct advantage of affording access to purulent and caseous foci, and give opportunity for removal of the same, which by their spread might give rise to abscess, empyemata, or tubercular meningitis. But it is within the bounds of possibility that interference with a long canal such as the spinal, with its more or less limited inflamed areas, may bring almost the result one wished to avoid.

To sum up then, I would recommend the rest and extension method in cases in which there are still indications that the spinal cord is not hopelessly disorganised, such indications being retention of slight movement in a limb or slight sensation, partial control over bladder or rectum, or reflexes not markedly exaggerated or lost, any one of which symptoms will be present in by far the majority of cases. Or secondly, those in which the temperature is normal, pointing to no large collection of pus requiring immediate evacuation. Even if fever be present it must be carefully ascertained that it is due to abscesses in connection with the spine, and not to an outbreak of tubercle elsewhere. And, thirdly, the conservative method should be recommended to those who can

command the care and attention incidental to such a long course of treatment.

Mr. Arbuthnot Lane remarked that in many of the cases upon which he had operated there had been some serious complication such as bronchitis, cystitis, &c., which rendered relief urgent, and he had usually found large caseous foci and often fluid pus; he had not observed such great thickening of the meninges as was mentioned by other operators. He thought that sometimes an abscess might remain in front of the posterior common ligament unopened, through the disinclination on the part of the operator to probe a wound deeply in the spinal canal. He mentioned a case in which after eighteen months' treatment by recumbency, the patient apparently recovered and worked for two or three years, when the paraplegia for which he was operated upon returned, and there was found in the chest a large abscess surrounded by bone, and a large collection of tuberculous material was also found in the thorax.

Dr. Newton Pitt was much interested, inasmuch as in a general hospital the cases were not usually retained long enough to see ultimate results. He mentioned a case in which operation was not performed owing to the difficulty of ascertaining the precise locality of the disease, and asked was it possible always to decide on the situation of the trouble? For himself he said that if the line of sensory disturbance was well defined and the angle of curvature sharp, he thought the decision easy, but in the reverse conditions he would be undecided. In one or two fatal cases he had been much struck by the great mobility of the bony canal after injury, and thought that this was a difficulty in discussing treatment, but after all the operation must be judged by results, and when surgeons could point to a series of successful cases by laminectomy, rest must go as it had done in the treatment of pulpy joints.

THE PRESIDENT thought that if an abscess could be distinctly diagnosed then operation was imperative.

Dr. Hewer mentioned a patient of his who had twice had laminectomy performed without benefit, and a third operation was being proposed.

Mr. Turby, in reply, said that his paper was only the record of one case in which he had wished to do laminectomy but had refrained. He thanked Mr. Lane for the suggestion that acute complications indicated operation. The extension was practised sometimes mainly from the head, sometimes from the axillæ, with pillows to support the curved portion of the spine. He concluded that the indications for operation needed to be discussed, limited, and defined.

THREE CASES OF ACUTE INTESTINAL OBSTRUCTION AND THE LESSONS TO BE LEARNT FROM THEM.

Paper read by Dr. Fred. J. Smith.

Case I.—A woman, et. 60, a general servant, was quite well till April 23rd, 1889, when, after an injudicious meal of pork, &c., she complained of a pain in the stomach which appeared suddenly, and somewhat rapidly became severe, and for which she took castor oil and brandy. During the course of the 24th and 25th her condition remained much the same; she had no action of the bowels, but was sick several times. On the 25th she was seen by Dr. Cotman, who ordered her opium and small doses of calomel. Under this treatment the symptoms abated considerably, both pain and sickness were much relieved, but constipation remained absolute. On the 27th, late at night, he ordered her an enema, and as on the morning of the 28th this had not acted, and the patient seemed to be getting worse, Dr. Cotman requested me to see her with him. When we saw her together about 2 p.m. on the 28th she was lying quietly in bed in a semi-conscious state, making no complaint of pain at all, and not showing any serious symptoms of collapse; she had not been sick for many hours. The abdomen was not distended or hard, but gave a resonant note all over. The tongue was brown, showing some tendency to dryness, but not very marked. pulse was rather small and rapid, but not alarmingly so. He administered another enema with Mr. Treves' pistol apparatus. This was inoperative, and the patient died about five hours later.

Post-mortem.—On opening the abdomen the stomach and first seven or eight feet of the small intestine were found much distended, and the gut very purple and congested. At the distal extremity of this distended portion was a strangulation; about two-thirds of the circumference of the gut was pinched up and fixed in an aperture the exact locality of which we were unable to ascertain, owing to the limited nature of light and allowance of examination given to us, but it was situated somewhere close to the left side of the vertebræ, just above the level of the umbilicus. Other organs healthy to naked eye.

Case II.—A man, et. 75, after walking about with bare feet on cold flagstones, was taken ill on the 21st Nov., 1889, with a pain in the stomach, gradually increasing in severity and associated with constipation and some sickness. On the 23rd the sickness ceased, but returned again on the 24th, in the evening of which day Dr. Cotman asked me to see him in consultation. We found him vomiting a nasty yellow sticky fluid, not actually feculent, but of a very unpleasant odour; the tongue was very foul and furred, but not dry; the abdomen was somewhat distended, but the chief point in its physical examination was the intense board-like hardness of its parietes. The pulse was very small and exceedingly rapid and feeble. He died four hours later.

Post-mortem.—No peritonitis was found, even commencing, but about 18 inches of small gut, some portion of the ileum, had passed through

a small rent in the extreme lowest left-hand corner of the omentum. The other organs were healthy.

Case III. was a woman, et. 62, who had previously been healthy, with the exception of winter cough, for many years. Her bowels had been remarkably regular in their action. On the morning of March 21st, 1891, while dressing, she was suddenly seized with a severe pain which passed across the abdomen and seemed to settle on the left side. After this she had a motion, which in no way differed from her accustomed one; as the pain, however, still continued, she took some castor oil, but no improvement took place, and sickness supervened. Dr. Cotman saw her on the 23rd, and gave her a copious enema, which brought away a large quantity of fæces at 3 p.m. We saw her together about 6.30 p.m. of the same day, the 23rd. Her breath was quite sweet and free from odour, the tongue was clean nearly, but had a slight tendency to become dry. She had not been sick for about eight hours. Physical examination of the abdomen revealed a firm swelling in the right iliac quadrant, over which the percussion note was dull, resonance of an ordinary kind being present elsewhere. The swelling was slightly tender on manipulation, but beyond this she was absolutely free from pain, and remarkably comfortable and collected, shifting her position in bed to suit my examination with the ease and readiness of one in perfect health. The pulse was full and soft, reminding one more of a febrile than an abdominal one. Under opium, which we agreed to give her, she remained quite comfortable for two days, and some flatus passed, but no solid matter. On the 26th a sudden change set in, and she died rapidly from heart and lung failure, evidenced by the duskiness and blueness of the lips and a vivid purplish colour in the hands and feet.

Post-mortem.—About a foot or more of small intestine low down in the ileum had slipped between a right ovarian cystoma and a very dense adhesion binding the tumour to the posterior wall of the abdomen. The lungs were very emphysematous, and death had evidently taken place from cardiac failure. The gut was certainly somewhat distended and dark-coloured, but there was no evidence of peritonitis or even acute strangulation.

Remarks.—If one is called to a case in which the three cardinal symptoms of intestinal obstruction are present, viz., vomiting, abdominal pain, and constipation, one's first question is, I take it, To what are these symptoms due? are they indicative of what I may call primary obstruction, or are they symptomatic of cerebral or other disease? In the first case the patient's symptoms and condition were of such a character that I must confess I thought we had to deal with a nervous case, and had no autopsy been held I think I should still be of that opinion. In the other two cases it was more obvious that the lesion was primarily abdominal in character, though the board-like hardness of the muscular

parietes made me in Case II feel pretty confident that peritonitis was the actual disease; in the third case only did I feel sure of mechanical obstruction being present, and my diagnosis in consultation ran "obstruction but not strangulation" (cf. Mr. Bryant, Lancet, 1891, vol. i., p. 128), and hence we temporised in a fatal manner. It is true that my diagnosis was verified on autopsy, but such confirmation was a very small satisfaction.

Bearing in mind what was found after death in each case, I turned to Mr. Treves' (a recognised leader in abdominal diagnosis, and a surgeon with perhaps one of the largest experiences in obstruction of the prime viæ) monograph on "Intestinal Obstruction" to see if I could with his assistance work back to a confident diagnosis, either for a future guidance or to allay useless past regrets. On p. 373 of Mr. Treves' work he remarks that for purposes of diagnosis intestinal obstruction may be divided into three great classes, (1) acute, (2) chronic, (3) acute supervening on chronic. was at once obvious from the duration of the symptoms (six, four, and six days respectively from onset to death) and from their sudden onset in the midst of usual good health that all our three cases were to be placed in class (1). Proceeding then to closer analysis Mr. Treves makes four different forms of lesion in this class. A. Strangulation by bands or through B. Volvulus. C. Intussusception. D. Foreign bodies. The post-mortem showed that form A was the only one present, so I will now proceed to quote his hints to diagnosis of this form seriatim. Sex.—"They are a little more common in males than in females," my cases present two females to one male. Age.—"They are very rare after forty," the ages in the present instances were 60, 62, and 75. Previous History.—"A distinct history of previous peritonitis in 68 per cent. A history of previous attacks of obstruction like the present in 12 per cent." Neither by ante-mortem inquiry, nor by post-mortem evidence, was there the least trace of any such event as peritonitis or obstruction. In fact, I do not think I exaggerate if I say it was quite certainly proved that nothing of the kind had ever happened. Mode of Onset.—

"Sudden in over 70 per cent." All three cases began suddenly. Pain "is the earliest or one of the earliest signs. Is extremely severe, colicky, continuous, and persistent. may abate a little as the case advances." Pain was certainly present in all three cases, it was colicky, but was not extremely severe in any, nor was it continuous or persistent. It certainly abated as the case proceeded, not a little but almost entirely, and in two, (1) and (III), it was absent for at least twenty-four hours without any parallel advance in collapse. Local tenderness "is usually quite absent at first, but may come on in a few days." It was absent from first to last in cases (I) and (II), and was only transmitted, if I may use the term, in (III), i.e., was due to manipulation of the tumour behind which lay the strangulation. Vomiting.—"Appears early; is a marked symptom, being constant, copious, and severe. In 60 per cent. of the cases it becomes stercoraceous, on an average on the fifth day." It certainly appeared early in all cases, but was not constant or copious, possibly due to treatment, where I shall say a few words on it. Constipation "is continuous and absolute from the first. Enemata may evacuate the contents of the colon." In (I) and (II) this was a perfectly correct account of the progress of the case, but in (III) a guite natural motion followed after the onset of the pain. Prostration "is marked, and often there is profound collapse." In (II) there was prostration and collapse, but in (I) it was certainly not a marked feature, and in (III) was absolutely absent till within three or four hours of death. Tenesmus "is absent." It was so in all three. Abdominal Parietes "flaccid unless peritonitis has set in." the case in (I) and (III), but in (II) it was this very feature that misled me.

In face of such an array of exceptions and doubts (proved by post-mortem evidence) in rules laid down by a first-rate authority, I think it is quite open to me to assert that, given a case of intestinal obstruction (of course excluding obvious hernia, &c.), it is impossible to diagnose with precision, either the exact locality or nature of the lesion, and that in a very large majority of cases we must be content to say there is obstruction of an acute nature, and to act accordingly.

This brings me to my next point of criticism. How are we to act? What is to be our treatment when brought to the bedside of a patient suffering from acute obstruction? Theoretically, treatment should depend on diagnosis, and all cases could at once be placed in one of two groups; (1) mere obstruction within, which might be treated with drugs, and (2) such a mechanical condition of the gut as can only be relieved by operation; but such theorising and simplicity does not work out in practice, and we require a few simple rules for guidance which shall be easy of application in every case. It is not my object, nor am I in a position to discuss treatment fully. or to lay down fixed rules for others to follow, but the uniformly fatal end of these three cases made such an impression on my mind, that I have formulated for my own guidance one or two simple rules, from which it is my firm intention never to depart in any future case of acute intestinal obstruction in which I am consulted. Treatment is almost exclusively confined to four procedures. (I) Purgatives; these require mentioning only to insist upon the scrupulous care with which they should be avoided in almost all cases. (II) Violent manipulation, practised by Mr. Hutchinson, before whose experience and acumen criticism stands abashed. (III) Opium and expectancy, useful to the last degree in the earliest hours, dangerous in proportion to the duration of their application. (IV) Surgical interference, puncture of the gut or laparotomy; the difficulties here are two, the reluctance of friends, and the danger of the proceeding. Mr. Hutchinson's method would in all probability have proved successful in Case I., but in the remaining two cases nothing short of laparotomy would have been of the slightest avail. I may now, in conclusion, briefly record my own rules mentioned above; they are—(1) For twentyfour hours give opium or other sedatives freely, and resort to massage of a quiet nature with the hands only, kneading the abdomen in the direction of the hands of a watch for a quarter-of-an-hour at a time, three or four times in the first

twenty-four hours from the onset of the symptoms. (2) At the end of twenty-four hours avoid most sedulously all sedatives, and at the first sign of returning symptoms call in surgical aid at once, insisting to the friends on its necessity, and with the greater earnestness in proportion to the smallness and the rapidity of the pulse and the increasing tension of the abdomen.

DR. COTMAN said he had little to add to what Dr. Smith had said on the cases; he quite agreed with Dr. Smith on the place which opium occupied in the treatment. With regard to Mr. Hutchinson's method of treatment he said the difficulties were two—(1) the mechanical one of performing violent shaking on stout and heavy patients; (2) the reluctance of the friends to allow the treatment.

Mr. Thorp advised Dover's powder gr. 3 every two or three hours as a convenient form of opium.

Mr. Goodsall thanked Dr. Smith for publishing fearlessly an account of fatal cases. He then quoted the following case:—Nine months ago a woman aged thirty-two slipped from a chair at 10 a.m.; she remained on the floor in intense pain for half-an-hour, the pain passed off, she ate a mid-day dinner, later had tea, and afterwards went on a visit with her husband and had a very hearty supper. After supper she was seized with a pain in the abdomen so severe that she stayed with her friends all night; next morning she was still in pain and was very sick. Under a suspicion of attempted abortion she was treated with opium. When Mr. Goodsall saw her she was very collapsed and the pulse was very small. An operation was performed, and a strangulation of the gut was found caused by an adhesive band under which the intestine had slipped. Through injudicious feeding by the friends in direct opposition to his orders, she died twenty hours after the operation. He mentioned also another case in which he had performed laparotomy, and found the obstruction due to acute peritonitis set up by the bursting of an abscess; in this case the pain had ceased for twentyfour hours, but had returned.

Dr. Pitt asked Dr. Smith what would be his view when he had had three consecutive cases fatal after operation. Hitherto none of his own cases of intestinal strangulation had recovered, even after operation. Such cases were, he remarked, admitted too late; he agreed with Dr. Smith in the difficulty of diagnosis, but would say, why wait until the diagnosis was certain? Why not operate early, while the patient's condition still remains good, as soon as it is probable that there is strangulation? He remarked, however, that Dr. Fagge, during the last two years of his life, was not in favour of early surgical interference in cases of intestinal obstruction, having previously passed through a period of considerable surgical activity.

MR. Lane said that the cases were sent into hospital only at the last moment, and that the surgeons operated only as a duty, not with a reasonable hope of success.

Mr. Openshaw drew attention to the difficulty of diagnosing acute enteritis in some cases from acute obstruction; he had recently had two cases of this nature; both recovered without operation. He said he always performed abdominal section with diffidence.

THE PRESIDENT narrated a case of his own in which he used Mr. Hutchinson's method of treatment long before its suggestion by that surgeon; the patient recovered at the time, but subsequently had a relapse, and died after operation.

Dr. Smith replied that he would still urge operation, provided he could get the cases early enough after the onset of the trouble, and to this end would try to render diagnosis more precise. In answer to Dr. Cotman, he would make the condition of the pulse and tongue his guides as to the condition of the patient.

APRIL 13th, 1892.—Clinical Evening. ACROMEGALY.

Case shown by the President.

The case belonged to the class of degenerations, probably due to disease of the ductless glands, and was allied to myxœdema, Goître and Addison's disease. Acromegaly had lately been described in a paper by Mr. Hutchinson of great value, and in essays by Drs. Pierre Marie and Souza-Leite, published by the New Sydenham Society.

The following is a resumé of the subject, derived from the latter work.

Definition..—A disease characterised by great increase in the growth of the head, hands and feet. Unlike Myxædema, there is no ædema. The face is oval rather than a "full moon," and headache is a constant symptom, with pains in the limbs, muscular weakness and palpitation.

Etiology.—Not inherited. Both sexes attacked, at an age varying from twenty to forty, coming on very gradually and slowly; rheumatism and gout are frequent fore-runners, and sometimes, too, syphilis. The exciting cause is not known.

Morbid Anatomy.—The bones of the head, hands, and feet are enlarged, but especially the lower jaw, which often protrudes a centimetre beyond the upper, so that the teeth in front do not meet. The chin is much elongated and prominent, and the face is prognathous and oval. The sella turcica of the sphenoid bone is particularly increased, forming a large cup-shaped hollow. The pituitary body is much increased; in one case it weighed 210 grains. The walls of the sinuses are thinned and the cavities dilated. The clavicles and iliac bones, the ribs and the

bones of the fingers and toes are all thickened and hypertrophied. The long bones of the extremities are not enlarged, but their prominences and muscular impressions are increased, and the bony foramina dilated. The vertebræ are very large, especially the bodies, but these in the upper dorsal region are thinner in front, causing a kyphotic curve to the neck. Sometimes there is hypertrophy of the ganglia and nerves of the sympathetic system. The thymus gland is frequently persistent, and often there is some alteration in the thyroid. Alterations take place in the vocal cords, giving a gruff sepulchral voice. The generative organs are not active.

Symptoms.—The disease comes on very insidiously, sometimes after a slight accident, or an attack of rheumatism. The face, hands, and feet slowly enlarge, a fact often noticed by the clothier before the patient is aware of it; sometimes there are severe pains in the head increased by lying down, occasionally also there are pains in the limbs. The face elongates and is oval with a prominent chin, the lips and nose are often thickened and the eyelids swollen. The hands are greatly enlarged, the wrist thickened, the palm battle-dore shaped or spade-like, and the fingers equally enlarged up to their terminations, like sausages a little flattened. There is no pitting; the nails are small and often striated longitudinally. The folds of the skin opposite the joints and between the fingers are increased. The feet are affected in the same way as the hands, being enlarged, thickened, and flattened without any increase in length.

The forehead usually appears low and the orbits thickened, owing to the increase of the frontal sinuses and the tissues about the orbit, which may cause exophthalmos. But the eyes are sometimes very small. The nose is especially enlarged both in the alæ and the septum. The lips are swollen, more particularly the lower, and the tongue hypertrophied, even in some cases protruding, but it always impairs the pronunciation. The tonsils and the mucous membrane of the fauces are also increased in size, and the uvula often elongated, changing the tone of the voice and causing cough.

Gradually the back becomes rounded, and the head bent forwards, while the lower part of the chest and abdomen are prominent in front, so that the patient resembles the figure of "Punch." The sternum is thickened, widened and often elongated. Sometimes there is a wedgeshaped dulness on percussion over the upper part, due to the persistence of the thymus gland. The thyroid gland is often diminished. larynx is thickened and the cartilages often ossified. The heart is hypertrophied and palpitation is often present; sometimes there is a systolic aortic bruit. Hæmorrhoids and varicose veins are frequently Profuse perspirations occur, and the urine is increased in quantity, and frequently albumen or sugar are present. The skin of the hands and feet is generally darker than over the rest of the body, and small tumours like molluscum fibrosum are seen over the body and extremities. Sight is feeble; sometimes there is amaurosis from optic neuritis; also deafness, accompanied with tingling of the ears, and the sense of smell is blunted. The appetite is generally excessive and thirst usually great. The patient is generally feeble and weak and disinclined to work, his spirits are dejected and the temper irritable, accompanied

with melancholia, and sometimes leading to suicide. The progress of the disease is slow, lasting from 10 to 40 or more years: a cachectic condition is established; the skin becomes yellow; the muscles lose their tone and are soft, and the patient is confined to his bed, and at length he dies of syncope or cerebral compression.

Diagnosis.—It differs from Myxædema, by the bones as well as the soft parts becoming enlarged, by the shape of the face and the curvature

of spine.

From chronic Rheumatism, by there being less pain in the joints, no sign of inflammation, nor cracking. The fingers are not nodular but uniformly enlarged.

From Gigantism, by the patient not being of a great height, and by

the hands and feet being out of proportion to the rest of the body.

From Hypertrophic Pulmonary Osteo-Arthropathy, by the lips, tongue, and neck being enlarged; and the curvature of the spine being upper dorsal and not lumbar: the hands, too, differ by the fact that the palm is never much increased in size in pulmonary disease, but the fingers are more so, and bulbous instead of uniform, and the nails are indented. The wrists are more enlarged than in acromegaly. The feet, ankles, and toes are more affected in pulmonary disease.

Prognosis.—Unfavourable.

Treatment.—Antipyrin and Valerianate of Caffeine relieve the headache. Arsenic, alkalies and tonics, and dietary for the general health.

A clergyman, aged 40 years; his father died at 68 of idiopathic anæmia, his mother was epileptic, and an uncle died of phthisis. He had rheumatic fever at nine years; and a diastolic mitral murmur was audible for some years afterwards. The disease came on imperceptibly. Ten years ago right frontal headache commenced and has continued more or less since; the sensation was that of pressure, intensified by overwork or confinement in a hot room, but always present. Six months ago palpitation set in, with shortness of breath on exertion. Perspiration had been profuse and acid since childhood; there was thirst and large appetite; he was a teetotaller. No pains in the limbs. Fifteen years ago the size of his hands was remarked upon; he now wore gloves of size "nine;" his feet also were large. Patient's face was oval, elongated and slightly one-sided (twisted towards the right side), the lower jaw thickened and prominent, especially at the symphysis; the lower teeth projected beyond the upper. The temporal ridges and zygomata were very prominent, and the temporal fossæ depressed; the frontal sinuses, particularly the right, were prominent; the eyes

deeply set. The parietal and occipital protuberances and ridges were markedly thickened and prominent. The tip and alæ of the nose were swollen, and the lobes of the ear large. There were peculiar lines extending from the evebrows to the roots of the hair, more marked upon the right side. The lower lip was much thickened, the tongue large and flabby, the tonsils large, especially the left, and the mucous lining of the pharynx in folds. Myopia was present, to a greater degree in the left eye, fundi healthy; hearing good, voice rather gruff and jerking, smell blunted. spine showed a tendency to kyphosis, causing the head to be carried forward; there was some compensatory lordosis below. Sternum eight-and-a-quarter inches long, thickened and projecting at the left side, causing a depression of the ribs. clavicles were large, and ribs broad. There were several pedunculated growths of molluscum fibrosum about the chest and arms. The abdomen was prominent; liver not enlarged; no dulness over the thymus; urine healthy. Pulse regular, soft, 110 to 130 or more. There was a fold of skin over the tuberosities of the tibiae. The hands were remarkably enlarged, especially in the parts supplied by the median nerve; they were battledore-shaped, the thenar side prominent, the surface lines and folds between the fingers deep; the fingers were flattened. The patient was improving under antipyrin, and arsenic in five minim doses.

Dr. Hingston Fox asked as to the rapidity of the heart's action and its cause.

Dr. F. J. Smith regarded the case as a good example of acromegaly. Samson, the "strong man," had lately been exhibited at the Pathological Society, but he was simply a big man, there was no acromegaly. The gradual onset since adult age in the present case was characteristic.

Dr. Glover Lyon asked if there was special muscular strength in this case.

THE PRESIDENT replying, said that hypertrophy of the heart and palpitation were recorded as constant symptoms of the disease. Samson was, no doubt, an instance of gigantism. The present subject was not a strong man.

ELEPHANTIASIS OF THE RIGHT LEG.

Case shewn by the President.

A girl aged 12 years. Her father has had abscesses in the neck, and three children out of six have died. No illnesses except measles. At the age of five and a half years her mother noticed a swelling above the knee, which extended slowly to the leg and foot. There was no inflammation, no pain, enlarged veins, or gland swelling. The leg became heavy, and she often fell, but there was no history of injury. She could now walk for some distance, but fatigue and more swelling resulted. A Martin's bandage kept the swelling in check. Her general health was fair. The right limb was uniformly enlarged with a firm swelling; no pitting; no lengthening; the thigh was three inches, the calf one and-a-half inches, larger in circumference than on the other side.

Dr. F. J. Smith referred to a similar case seen at the Royal Chest Hospital; a young man. In this case there was pitting on pressure.

Mr. Fendick thought the cases inexplicable: it could not be called œdema.

THE PRESIDENT could not explain the obstruction of lymphatics which was, no doubt, at the root of the disorder.

TRANSPOSITION OF VISCERA.

Case exhibited by Dr. Arthur T. Davies.

A boy aged 10 years complained of cough, dyspnœa and hoarseness. No previous illness save measles. His skin was rather dusky and bluish; the fingers and toes clubbed and chilly. The chest showed a distinct flattening over the usual cardiac area, where a faint impulse was felt. On the right side of the sternum pulsation was visible and impulse felt. The area of cardiac dulness was placed entirely on the right side, extending from the parasternal line to the right nipple line, its upper border from the junction of the second right costal cartilage with the sternum to the apex beat, which was felt in the fifth right intercostal space, just inside and below the right nipple. A loud systolic bruit was heard all over the cardiac area and beyond it, the maximum in the second

right intercostal space. The liver dulness was on the left side, from the upper border of the sixth rib to the costal margin; the edge could be distinctly felt on deep inspiration. The tympanitic resonance of the stomach was found below the right costal margin: the spleen could not be readily defined. The boy was right-handed. Dr. Davies remarked that post mortem examination in such cases had shown that the transposition was complete throughout the thorax and abdomen. He attributed the bruit to pulmonary stenosis, and thought this was the cause of the cyanosis present. There might be an incomplete septum, auricular or ventricular, but the old hypothesis that cyanosis was due to an intermixture of venous and arterial blood, was now exploded.

CONGENITAL HEART DISEASE.

Two cases shewn by Dr. T. Glover Lyon.

Both were boys aged about 10 years. The symptoms had existed in each case from birth. In the first case a systolic murmur was heard over the base of the heart, loudest near the first rib; there was venous pulsation, and pallor verging on cyanosis, with much clubbing of the fingers. In the second case a systolic bruit was audible, loudest about the fourth rib to the left of the sternum; he was liable to a red flush, going on sometimes to a bluish hue of countenance.

Dr. F. J. Smith believed that much in our text-books on cardiac disease would have to be re-written. The diagnosis of lesions from the murmurs heard was generally erroneous. He considered these three cases as unquestionably instances of pulmonary stenosis.

MYXŒDEMA.

Case brought forward by Dr. Arthur T. Davies.

A woman, aged 45 years, had had 13 children, of whom 10 were living. Her mother died at 46 of phthisis. She began to get stout at 39, her face and hands puffed up so that she could not use her needle, and her skin became dry. She has become slower in thought and action for three years past,

and her hair has come out of late. She came in November last, complaining of pains in the head and back, affection of speech, profuse and frequent menstruation, dyspnæa, and chilliness. She attributed her symptoms to a severe chill after her last confinement, seven years ago. She had an aspect of general bulkiness. The face was puffy, the cheeks of a delicate porcelain pink hue, wrinkles obliterated, eyelids ædematous and pearly, hair thin, and the nose broad. The hands were spade-like, and the skin very dry; cushions of fat were to be felt above the clavicles; the thyroid could not be detected. The urine showed 1.5 per cent. of urea; no albumen.

MORPHŒA (CIRCUMSCRIBED SCLERODERMIA) UNDERGOING RESOLUTION.

Case exhibited by Dr. James Galloway.

A woman aged 28 years. The diseased patch occupied almost exactly the distribution of the right frontal nerve, being narrow at the supra-orbital notch, and widening out posteriorly towards the vertex. The skin was glossy, indurated, and of the colour of old ivory. One or two small spots also existed on the right side of the nose and upper lip: these were difficult to see, but could be felt by the patient on account of the tight sensation in the skin. disease commenced 10 years ago, and had persisted unchanged until within the last six months, during which the skin over the right eyebrow had become somewhat less indurated, and the patient was now able to wrinkle the forehead over an area which was formerly quite firm and glossy. The patch had never been ædematous while under observation, but was depressed below the level of the surrounding skin; nor was there any elevated area limiting the patch. The affected skin had been treated by the regular inunction of lanoline.

FIBRO-ADENOMA.

Specimen shewn by Mr. John Poland.

The specimen had been removed from the outer side of

the left breast of a girl aged 17 years. It weighed almost 1-lb., and measured $5\frac{1}{4}$ by nearly 4 inches, its greatest circumference being 12 inches. Microscopically it presented a comparatively small amount of acinous tissue. Mr. Poland remarked on the unusual size of the mass at so early an age, and the rapid growth. Nine months ago it was not larger than a walnut. The skin over it was rather adherent, and the superficial veins were visible in a marked degree. Gross states that the rate of growth of these tumours may be computed at about two-thirds of an inch per year, and that an increase of $1\frac{3}{4}$ inches in six months was the most rapid he had seen.

APRIL 27th, 1892.

CASE OF HYDATID DISEASE OF THE SPLEEN, WITH DISCHARGE OF MEMBRANES PER RECTUM
TWELVE YEARS LATER.

Notes read by Dr. James Galloway for Mr. Hope Grant.

The notes were furnished by Dr. E. A. Snell, who was called to Mrs. B., aged 30 years, in February last, then suffering from Epidemic Influenza. She showed him a mass of membranes (now exhibited) which had been passed mixed with fæces; on examination by Dr. Galloway it showed characteristic hydatid structure. Twelve years before, she was attended by Dr. Letts of Yarmouth, who now reported that she had then a large abdominal tumour, as though she were some months pregnant; it extended from beneath the lower left ribs to three fingers breadth from the pubes, and four fingers breadth beyond the umbilicus. rounded margin presented anteriorly a distinct notch; no fluctuation was detected. About two years later, shortly after marriage, whilst passing water, she filled two or more chamber utensils, and the tumour almost entirely disappeared. She had enjoyed good health since, and had borne five

children, the last in February, 1892. During six months previous to this she had suffered from downward forcing feelings, which culminated in the discharge of the membrane per rectum. Since then she had passed a good deal of pus from time to time per rectum et urethram. There still existed a small tender swelling in the splenic region.

THE ELECTRICAL TREATMENT OF GRAVES' DISEASE.

Paper read by Mr. Denton Cardew.

He recommended the following method. To use the continuous current from two to three milli-ampères in strength; the Positive Electrode, a circular disc of ductile metal three inches in diameter, covered with wash leather, to be placed on the nape of the neck, so that the centre of its lower border corresponds to the seventh cervical process, and to be held in that position, being pressed against the skin during the application. The Negative Electrode, a circular disc of metal one-and-a-half inches in diameter, covered with wash leather, to be moved up and down the side of the neck, along the anterior border of the Sterno-mastoid. The Electrodes to be well soaked in hot water before being applied, and each application to last about six minutes. Three or more applications to be made daily.

The immediate effect of such an application, as demonstrated by Sphygmograms taken immediately before and after an application, was a diminution of the suddenness, violence and rate of the heart beat, to the great comfort of the patient. Another immediate effect was a diminution of the feeling of tension in the eyes, in those cases in which exophthalmos was a prominent symptom. The author adopted this method only after a series of experiments with other methods advocated. He found that the immediate effect of a stronger continuous current as evidenced by Sphygmograms was an increase of the cardio-vascular excitement. With a strong faradaic current a similar increase of cardio-vascular excitement resulted. With a weak faradaic

current no effect was produced. With a moderate faradaic current in some cases no effect was produced, in others an effect similar to that produced by the method described. method was therefore adopted as the most effective, and also because it could be regarded as self-applicable. that if an application with such a weak current was prolonged over a certain time, it caused an increase of the cardio-vascular excitement: he therefore never used it for more than six minutes at a time. He suggested at least three applications a day, as it was found that the diminution of the cardiovascular excitement lasted but for a few hours, especially at first. He suggested that hot water should be used in preference to warm saline and acid solutions, as with either of the latter used over a prolonged period it was impossible to prevent the skin from chapping, a complication which would stop the treatment for the time.

For apparatus, a small portable battery having an E.M.F. of about six volts, the electrodes as described, conducting wires, and a water voltameter to enable the patient occasionally to ascertain the working condition of his battery, were all that were required. He alluded to the difficulty of making the treatment, so to speak, by rule of thumb, owing to the great variation in the resistance of the human body, but as a rule for all practical purposes the latter might be estimated when using this method to be about 2,000 to 3,000 ohms.

A battery having an E.M.F. of about six volts would be sufficient therefore to force a current of about two to three milliampères through such a resistance.

In conclusion the author pointed out the necessity of encouraging the patient to persevere with the treatment, and not to be discouraged by the temporary relapses which would occur from time to time.

Dr. Hingston Fox regretted the brevity of the paper, as the writer's experience had been exceptional. Graves' disease ran an erratic course, sometimes appearing to get well of itself, sometimes progressing until it wore out the patient, or she became a victim to intercurrent maladies. Hence one received therapeutic results with some caution. There were two leading indications for general treatment. One was the "nervous" condition—the subject was over sensitive to shocks, anxious, distressed, excitable: this needed moral and hygienic treatment, care-

fully applied. Then there was almost always mal-nutrition,—perspirations, general wasting, especially of skin and hair, and probably of nervous system; nutritional helps were required. These two lines of treatment were of first importance. As to special means, some drugs were helpful; belladonna had appeared useful in the slighter cases, nothing cured in the graver examples. Iodide of Potassium, perhaps combined as Dr. Russell Reynolds advised with bromides and iron, did seem to control the heart's excessive action. Leiter's cold coil to the thyroid gland was worthy of further trial. He had used the constant current in six cases, including some partially developed instances, and had watched these cases over a considerable time; a rather weaker current than Mr. Cardew's, not generally exceeding two milliampères, was employed. The results were generally encouraging; the patients liked it, and thought it did them good. One lady used it for upwards of a year and a half. There was difficulty in applying this treatment to outpatients. Could Mr. Cardew recommend a cheap battery?

MR. MARK HOVELL agreed as to the general measures of treatment, and believed the electrical treatment described was the best special means.

Mr. E. A. Burgess had had experience of this disease in India. He practised on native women the inunction of red iodide of mercury ointment, allowing the patients to bask in the sun afterwards; the results were very satisfactory. He had no battery which would remain uninjured in that climate.

Dr. Fred. J. Smith appreciated the paper, but was this only one more added to the long list of remedies for the disease? Could we fathom what was the real result of the dose of electricity? If the natural tendency was towards cure, what did the electricity do to hasten it? We knew, for example, that in epilepsy there was loss of control over the energy accumulated. Did electricity in the case now in view increase the nervous energy, or increase the power of the nervous system to restrain the energy when formed? Had Mr. Cardew any theory as to this? He was himself brought up in the school of scepticism as to drugs; Graves' disease was a good illustration of their uselessness. The so-called general treatment could only be applied in a limited number of cases; and poor patients could not be put under the conditions Dr. Fox had named, as to rest, food, nursing, massage, and general living. Electricity stepped in, he thought, as a substitute, for the large percentage of cases who could not adopt such means.

Mr. W. Lang referred to the very able paper by Dr. W. Fitzgerald in the *Dublin Journal of Medical Science*, in which he reviewed the Continental literature of Graves' disease, and showed that the malady depended on disorder in the central nervous system close to the medulla. In experiments on rabbits, symptoms of Graves' disease were produced by lesions in this region; in one case nearly all the leading symptoms. On rare occasions of autopsies, e.g., one by Dr. Cheadle, softening of part of the medulla was found. In such conditions electricity would be distinctly useful, as well as other measures directed to improve the circulation. His own experience was limited to cases in which the eye symptoms

were prominent; besides general treatment, he found iron and potassium iodide apparently useful; the proptosis gradually disappeared.

Dr. A. T. Davies asked Mr. Cardew what was the average duration of the treatment. Few hospital patients would be willing to go on for two or three years. At what stage of the disease did he begin the electricity? Some cases certainly got well of themselves, as in one he had brought before the Society (see Transactions, 1891-2, p. 67). In another case under his care, the symptoms had continued for 22 years. The pigmentation of the skin which existed in some cases suggested a connection with Addison's disease.

Mr. Cardew, in reply, said that moral and hygienic treatment were of course necessary, as in all diseases. The cases might be divided into three categories—those which recovered without any treatment, those which recovered with drugs or electricity, and those which did not recover with any means used. Many of his cases had been under good physicians, and were not doing well. He treated them at all stages, generally in the later stages. As to duration, he had not had a case under treatment for longer than 10 months, but under observation much longer. Diminished skin resistance was present in this disorder, requiring caution in the use of the current. In old cases you did not get rid of the thyroid enlargement or proptosis. The dry battery he recommended cost £1: it could be made for eight or nine shillings for poor patients. The use was quite pleasant to the patient. He did not know how the remedy acted; he had no theory: some years ago it was thought that the current affected the sympathetic nerves, but it must be diffused through many other of the structures in the neck. Physiology must first tell us more than it does; we must know the effects of different currents and of different strengths, which varied greatly. Dr. Fitzgerald's paper was the best ever written on the subject.

THE TREATMENT OF CERTAIN EXTERNAL EYE AFFECTIONS.

Paper read by Mr. William Lang.

Dealing first with lachrymal disorders, he showed a Meyer's syringe modified by himself for injecting lotions into the lachrymal duct in epiphora. To cure granular lids, often so obstinate a complaint, the granulations were now expressed by curved forceps, after use of solid cocaine; perchloride of mercury four per cent. in glycerine was applied subsequently for six or eight weeks. Follicular conjunctivitis was similarly treated. The forceps were also used for meibomian tumours, after eversion of the lid, and incision of the mass. Molluscum contagiosum could be squeezed out with the same instru-

ment. In phlyctenular ophthalmia, much had been hoped from cocaine in relieving the photophobia, but its effect was only temporary and indeed hurtful. Yellow oxide of mercury ointment— "Pagenstecher's"—had long been used; but eserine should also be applied in very weak solution—a quarter-of-a-grain to the ounce; this combination soon relieved the pain. Fluorescin, an aniline dye, stained leucocytes; a solution of 2 per cent. was in use to stain corneal ulcers and abrasions, which were thus rendered visible and their margins defined; they became of a bright green colour. Opacities in the cornea after inflammation of its substance might be compared to callus—being material thrown out in excess during the healing process; heat and massage were now used to assist in its removal—bathing the eye with hot water, applying the yellow oxide ointment, and using gentle friction.

OCTOBER 12th, 1892.

The President, in the course of a few opening remarks, reviewed the medical features of the year. alluded to the epidemic of influenza at the beginning of 1892, and to the prevalence of diphtheria shortly afterwards. Later, scarlatina had been very prominent, but it was probable that the working of the new Notification Act, and the consequent larger use of the infectious hospitals, had drawn special attention to the disorder. The provision made for cases of scarlatina was very good; at the same time the cost of keeping children for the long period insisted on was a heavy tax on the ratepayer, and the interruption to school work was also great. The cholera, which had been so rife in some other countries, notably Russia and Persia, causing suffering of which we should probably never know, had been kept out of our own country by what we might term the "first line of defence," viz.: the Port Sanitary Authorities. These officers had earned our gratitude by their active and successful exertions.

Since the Society met last we had lost three of our Fellows.

Mr. Edward Cock was at the time of his death the "Father" of the Society, for although he was not one of the original members, he joined it as long ago as 1832, and was a link with its first founders. He was one of the leaders in surgery of the old school, and his talent as an operator and his striking personal qualities kept his memory fresh in the minds of old Guy's men. Dr. Burchell was, like Mr. Cock, a past president of the Society, and was also some time its librarian. Long a personal friend of his own, Dr. Burchell was a modest, retiring, scientific practitioner worthy of all esteem. Mr. Esquire Dukes, of Canonbury, took an active interest in the council and management of the Society some twenty years ago. At the instance of the President, it was resolved that a message of condolence should be communicated to the surviving relatives of the three deceased Fellows.

DR. ROBERT BARNES then delivered the second *Hunterian Society Lecture* of the session, entitled "Some Observations on Absorption in relation to Physiology, Pathology, and Therapeutics." (The lecture is published in *The Lancet*, 1892, vol. ii., p. 925.)

OCTOBER 26th, 1892.

PHTHISIS IN RELATION TO LIFE ASSURANCE.

Paper, introducing a Special Discussion, by Dr. Glover Lyon.

The following remarks are the outcome of an enquiry conducted by Mr. Manly, the actuary of the office, and myself, into the mortality experience of the Mutual Life Office, amongst such of its members as at entry gave a family history of consumption, and of those whose mothers had died in childbirth. In placing the results of this enquiry before the Institute of Actuaries, in February last, Mr. Manly was careful to point out that the paucity of his figures prevented any definite conclusions being arrived at from them, and several speakers expressed a hope that more material might be collected from other offices, so that the points in question might be finally settled.

The essential elements in an investigation into the mortality of any class of persons are:—First. The number of lives at risk at each age in the class under consideration. Second. The number of deaths at each age amongst them.

It is obvious that medical experience is quite unable to afford data to determine correctly these two quantities. Although deaths at various ages come under the observation of the physician he has no means of ascertaining the number of lives at risk corresponding to those deaths.

Even supposing it were possible to obtain from medical records complete data for the estimation of the extra risk attending a family history of consumption, it would be of little value in the present enquiry, for like figures apply only to like classes, and as we shall see immediately the mortality from consumption amongst insured lives differs materially from that of the population generally. No; the data essential to the estimation of the extra risk amongst insurable lives incident upon a family history of consumption is to be found only in the records of insurance offices, and the investigation cannot be brought to a satisfactory conclusion except by the combined efforts of the actuary and medical officer.

It will be convenient here to consider the points, as regards the applicant himself, generally considered to be important in the selection of lives, who may be suspected of being specially liable to consumption. They are—

1. Physique. 2. Conditions of Life. 3. Age.

Without assuming the existence of a recognizable consumptive type, there is no doubt that delicate persons, more especially those who are weak in the chest, are specially liable to phthisis. The importance, therefore, of rejecting applicants of such constitutions will be evident. The reports of some offices appear to show that the weight of the applicant is an indication of his power of resisting the disease, those above the average weight being less liable than those below it. I believe that reliance upon the general impression of the medical examiner is preferable to trusting to any rules of this kind.

The necessity of rejecting applicants engaged in pursuits whose conditions favour in them the production of phthisis need not be insisted upon.

Table showing the Mortality from Phthisis in England and Wales between 1871 and 1880, according to the Registrar-General; also the Mortality from Consumption in Three Life Offices—the Policies at Risk extending over 392,668 Years of Life.

DEAT	HS PER MILL	E PER ANNUM	A		
Age at Death.	Registra: Males.	Registrar-General. Males. Females.			
20-24	3.09	3.14	2.0		
25—34	3.70	3.54	2.29		
35—44	4.12	3.34	2.28		
4554	3.86	2.46	1.93		
55—64	3.19	1.78	1.79		
65—74	1.92	1.09			
75—	•60	•41	• • •		
		-			
20—64	3.45	2.91	2.06		

From the table it will be seen that the highest mortality from consumption in males, according to the Registrar-general, is between the ages of 35 and 45, decreasing only slightly as age advances, so that the percentage of deaths of those living between 55 and 64 is higher than that between 20 and 24. This variation in mortality according to age, is in great divergence from the impression in general acceptance. It will be observed that there is no rise in the mortality amongst females corresponding to the climacteric. It would appear also that the mortality amongst insured lives varies much in the same way, according to age, as in the population generally.

It has often been contended that the danger from consumption is much diminished after 40 years of age, but in the face of these figures this must be taken with great reserve. The fact being that the danger from consumption diminishes only slightly with age absolutely, but relatively to the danger from other diseases, it diminishes quickly after about 45. This is important from an insurance point of view, as showing that consumption, speaking generally, becomes of less consequence

as age advances.

Our chief concern is, however, with the extra risk alleged to attend a family history of consumption. Now, the mere fact that a man has survived to the age of 40, and is still in robust health, is evidence in itself that he was not born with a special liability to the disease. Indeed, I do not believe that, as a rule, much harm would be done by taking all applicants who had arrived at 40 years of age, and who still remained of robust constitution, at ordinary rates. Deaths

occurring from phthisis after 45 should be regarded as accidental, and not due to any special susceptibility to the disease. But whether this view be the correct one or not can be

determined only by actuarial investigation.

The variation which takes place in the mortality from phthisis at the various ages, suggests at least two causes acting against each other; one tending to increase the mortality as age advances, and the other to diminish it; the first being in excess of the second up to the age of about 40, causing a gradual increase with age, but after 40 the second cause becoming in excess of the first, and so producing a gradual decline in the mortality as age went on.

I believe such causes exist. It is well made out that the lungs in any particular subject are less liable to phthisis the greater are their vital and mechanical activity. therefore, not unreasonable to suppose that the great pulmonary activity of childhood might give almost perfect immunity from phthisis, the same thing continuing in a gradually modified degree through youth and early manhood. On the other hand, in any group of persons those most liable to phthisis would be likely to die the earliest, and hence, those who are advanced in age would be on the average less liable to phthisis than the younger persons in the group; hence, in groups of persons generally, advance in age would denote decrease in liability to the disease. These two causes acting antagonistically would be capable of producing the particular variations of mortality from phthisis according to age recorded by the Registrar-general.

A reference to the tables given above shows that during insurable ages the mortality from phthisis amongst women, according to the registrar-general, is much less than amongst men—2.91 against 3.45—so that, generally speaking, so far as risk from the disease is concerned, women must be looked upon as better lives than men. Whether the extra risk due to family history is less in women than in men is, of course, another question, and on the whole it would, I believe, be best to make no difference between the sexes in the matter

of selection.

Let us now pass on to the consideration of the effect of family history in relation to the subject of discussion. It is now proved beyond reasonable doubt that phthisis is caused by the entrance into the lungs and growth there of a specific micro-organism—in other words, that phthisis is a zymotic disease. As in the case of other diseases of this class—

- 1. The susceptibility to contract phthisis varies in different persons and in the same person according to his age and the conditions of his life.
- 2. The degree of susceptibility to the disease is largely hereditary.

In order to protect insurance offices from loss by the acceptance of applicants specially liable to phthisis, it has been the custom in most offices to form classes according to the varieties of family histories, and to charge various extra premiums upon applicants falling into those classes. Such extras have up to now been fixed by the medical advisers of the office, according to their opinions as to the extra risk involved. These opinions have been based upon no definite calculations; indeed, the data for such calculations were not in existence. Such a condition of things is obviously unsatisfactory, more especially as ample material is known to be collected in the London insurance offices to afford such data.

It must, however, be remembered that our results apply to insurable lives only. Again, the records of insurance offices do not give reliable information with respect to the cause of death of any relation outside the immediate family circle, so that we are forced to limit our enquiry accordingly. The fact that advance in age denotes small liability to phthisis applies equally to the relations of any applicant as to himself, so that cases of phthisis occurring in relations advanced in life are of less value in family history than those occurring in early life.

There are two theories pretty generally accepted, which call for notice.

It is said that applicants whose parents have died of phthisis, who have passed the age at which their parents died, are less risky lives than those who have not done so. This is based upon the fact that the children of phthisical parents, if they succumb to the disease, on the average do so at an earlier age than their parents. But it is evident that those who have lived long enough to be parents will, on the average, be older than the general population, whether they die of consumption or not.

Again, it is said that brothers and sisters who die of consumption usually die about the same age, and it is argued that, in the case of a brother or sister having died of consumption, applicants who have out-lived the age at which they died are better lives than those who have not done so.

I doubt very much whether this is supported by facts. It is, of course, a common experience that in a family highly susceptible to phthisis several of the family will succumb to the disease early in life, say about 20 years of age. We are struck by this coincidence, and are apt to neglect the cases which do not conform to the rule. I am inclined to think that when we have said advance of age denotes small susceptibility to the disease, whether it be in the applicant himself or his relations, we have said the last word of importance in the matter, and that the respective ages of relations are of no value at all.

It is said by some that death from phthisis in the mother is of more importance than in the father. The proposition is supposed to be supported by the alleged fact that more phthisical patients give a family history of death from the disease in the mother than in the father. Even if this were true, and authorities differ upon the point, it would prove nothing, for we have no record for comparison showing the proportion of fathers and mothers dying of consumption amongst the general population. Many causes would tend to make more mothers in general die of consumption than fathers, the most obvious one being that women marry earlier than men.

The following is the result of the investigation of the mortality experience of the Mutual Life Office, between 1847 and 1890, amongst those of its members who had given on entry a family history of consumption. A large number of these in the earlier part of the period were taken at ordinary rates, and it is only recently that it was thought necessary to charge an extra on account of family history. These lives must therefore be looked upon as being, so far as personal examinations are concerned, of robust physical condition, Family history was not recorded before this period at this office.

Table showing Number of Deaths amongst Lives with Family Histories of Consumption, compared with Expected Deaths.

Relations wh	no Died	of Con	sump	tion.	I	Entered.	Died.	Expected Deaths.
LINEALS ONLY.								
1. One Parent or	aly				•	152	42	33.661
2. Father only	•					69	20	16.091
3. Mother only		•	•			83	22	17.570
4. Mother and F	ather	only	•	•	•	9	3	3.821
						161	45	37.482

LINEALS AND COLLA	Entered.	Died.	Expected Deaths.					
5. One Parent and one Brother or Sister6. Both Parents and one Sister or Brother	$\begin{array}{c} 58 \\ 2 \end{array}$	11 0	12·399 ·242					
	60	11	12.641					
COLLATERALS ONLY.								
7. One Brother or Sister8. Two or more Brothers or Sisters.	282 81	$\begin{array}{c} 73 \\ 22 \end{array}$	71·510 22·699					
	363	95	94.209					
Totals	584	151	144.332					

Mr. Manly gives a detailed report of the experience of the Mutual office in actuarial terms, and then says:

"A general survey of these observations leads, I think, to "the following conclusions:

"1st.—That the cases where there has been evidence of "consumption in a parent and another member of the "family are too few to make the observations of any "value, but as the experience has been lighter than the "expected, we are bound to come to the conclusion "that they were selected with extreme care, and that "great credit is due to the medical advisers.

"2nd.—That, so far as these observations have any "weight, cases of consumption in the family, other "than in a parent, may be disregarded where the "applicant is perfectly sound. As the total observations under the head of 'Collaterals' embrace 6,714 "years of life and 128 deaths, I think it will be considered that some weight does attach to them.

"There are only left for consideration the classes where one parent alone has died of consumption, and where the mother has died of childbirth. As regards the total mortality, it appears that the effect is exactly the same whether the father or the mother died of consumption; but the greatest excess has occurred at different ages, owing probably to the paucity of the numbers. By combining the two, the mortality will run more smoothly, and we shall obtain a very fair estimate of the mortality prevailing where one parent died of consumption, deduced from 2,193 years of life and 42 deaths, the observations extending over an average period of $14\frac{1}{2}$ years.

"These tables (given in full in Mr. Manly's report) show that in the case of first-class lives, where one parent has

"died of consumption, an addition of three to four years of age will cover the extra risk; but where the mother has died in childbirth an addition of five years under age 40 should be required; from 40 to 45, four years; and after 45, three years.

"No great value, however, must be attached to these tables "where the lives are under 30 years of age, on account of

"the paucity of the observations."

"It is a practice, I believe, with some offices to take these "lives at ordinary rates for endowment assurances, and I have "therefore calculated the premiums for such assurances and "placed them side by side with the H^M rates. Roughly, it "may be said that the extra risk would be covered by adding, "for every hundred pounds insured, 2s. to the premium for "an assurance at 45 or death; 3s. at 50 or death; 3s. 6d. at "55 or death; 4s. at 60 or death; and 5s. at 65 or death.

"I believe it is a rule amongst some of the American "offices to absolutely decline all cases where there is evidence "of two cases of consumption in the family. The cases in "my statistics embrace 140 lives and 33 deaths, and the facts "certainly do not justify the theory, for the mortality in these "tables is as good as any under observation. It appears to "me that the rule is too drastic, and all that is required is "increased caution on the part of the medical officer.

"Then, again, there is a theory that the risk is greater "where the age of the applicant is less than the age at death "of the relative who died of consumption. The cases are not "numerous enough to justify any conclusion being drawn "from them, but I cannot find that that had any weight with "the medical examiners in selecting these lives, nor have I "any reason to suppose that the mortality would be different "from the rest of the class.

"There is still another theory, that the time of the "greatest risk of the hereditary taint being developed is in "early manhood; and that when that time is passed, and the "applicant is of sound constitution, and in every respect but "for the family history, a first-class life, then the risk, as is "actually shown by these figures, is small.

"Personally, I have a great respect for the last theory; and "I am inclined to think that all persons under 25 years of "age who had a parent die of consumption or child-birth "should be charged the premium for age 30, but that after "the age of 25 an addition of from five to three years is quite

"sufficient to cover the risk."

The question as to whether the excess of mortality amongst lives with a family history of phthisis, as shown by the Mutual figures, is due to excess of deaths from phthisis is difficult to determine.

Referring to the chart it will be observed that the chief excess of mortality amongst consumptives occurs between 35 and 45—i.e., at the same ages as the maximum mortality from consumption recorded by the Registrar-general; this suggests that the excess of early deaths in this class is due to

consumption.

The deaths from phthisis amongst lives with phthisical family history, are as a matter of fact, in excess compared with those from other causes, being 14.12 against 8.5 amongst the general body of assurers in the Mutual between 1837 and This, however, proves nothing. The mortality from consumption, in all cases compared with that from other diseases, varies greatly according to the ages of those at risk. The ages of those at risk will be influenced by many causes. The older the office the smaller will be the average age of its Again, offices which do large loan businesses, and whose members do not continue their policies unto old old age, will, other things equal, contain a large proportion of young lives. We thus find a very great difference between the percentage of deaths due to phthisis in different offices. In the Scottish Widows, 1815-1873, the percentage of deaths from this disease is only 7.58, whereas in the British Empire Mutual, between 1847 and 1878, it is 17.75. The same will happen in the different classes of policies in the same office. so that any comparison of the mortality in different classes from consumption is impossible, except it be done upon strict actuarial principles.

The question of the relative value of family history in lineals and collaterals is very interesting and somewhat difficult. The great difference in mortality according to the Mutual figures between the class in which one brother or sister only had died of consumption, and that in which one parent only had succumbed to the disease, does not really show that collaterals may be neglected in the question. It suggests that collaterals are of little consequence where lineals are free from the taint, but in the cases where lineals were found to have died of consumption the occurrence of the disease or not in collaterals would probably be very valuable as showing whether or not the taint had been handed down

to the second generation.

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It should be remembered here that the history of the parents is more complete than the history of collaterals, so that many applicants who on entry give a history of one parent alone having died of consumption, if they survived and were examined later on, would often have to add a death of a brother or sister also, and would then fall in the class having a history of phthisis in both lineals and collaterals. On the other hand, if a parent died of phthisis after the entry of an applicant it would be, as a rule, after 45, and would

thus fall into the category of accidental cases.

The favourable experience of the Mutual with regard to lives belonging to families apparently deeply tainted with consumption leads us to hope that, whatever the family history of applicants may be, careful examination is able to eliminate the greater part of those who are specially liable to the disease. It should be mentioned here that about eightninths of the applicants which form the class of one brother or sister dying of consumption had passed the age at which the consumptive relations might be fairly considered to have contracted the disease, so that whether this was the result of special selection or not, Mr. Manly's result must for the present be considered to apply only to such a selected class, in the face of the general medical impression that such selections would be valuable in the case.

It has long been the opinion of insurance medical officers that applicants whose mothers had died in childbirth are inferior lives: this opinion is supported by the experience of the Mutual as far as it goes.

In conclusion let me summarize as follows:

Medical records contain no adequate data for determining the question of consumption in relation to life insurance.

Several theories exist of an obstructive nature, relating to the selection of lives having a family history of consumption. Examination of these theories show them to be founded upon insufficient data.

As the records of insurance offices contain the material for settling equitably the various questions belonging to this subject, it is advisable that an enquiry should be made, based upon these records, and conducted jointly by the actuary and medical officer.

THE PRESIDENT said we were much obliged to Dr. Glover Lyon for the valuable and suggestive paper. Personally, he had but little to do with life assurance work, but he had to make a great number of examinations connected with two of the public services (Militia and Police) and, probably, valuable statistics could be obtained from such classes as these. Looking casually over the statistics of the Force he was more intimately connected with, he found that phthisis did not come into the death-rate very materially, because a man, if he were affected by consumption, was usually pensioned. A man was sometimes kept in the Force, and returned as dying of phthisis, when, probably, he would not get a pension, or for some other consideration more of a charitable nature. By the pension list it was found that, although most careful selection took place on entrance into the Force, a certain leakage from phthisis occurred. Last year the number of men pensioned by the medical officer was 28 or 29, and in something like seven of those it was due directly to phthisis, but he hoped it would be less than this in future. The average age at which these men were pensioned was about 30 years and seven months; probably they would live a year or two longer, so that would bring their age at death to about 32. It had always been an anxiety to him to try to eliminate these break-down cases of phthisis from the Force. The manner of examination was as strict or stricter than that of most Insurance Companies. The tape measure, as prescribed by the military regulations, showed the extreme inspiration and expiration—a much better criterion than stating merely the girth of the chest. He thought the Spirometer had also been very helpful.

It was impracticable to go into the details of the family history of these cases for two reasons. The men would, probably, not tell you the truth, and, still more probably, they would be ignorant of the histories of their families. Life Assurance Companies, no doubt, also suffered from the same difficulty. It would be well if we could have some kind of investigation among ourselves with a regular tabular form, as to the value of family history in consumption.

DR. Pye-Smith: All of us who advise Insurance Offices on medical matters will, I am sure, agree as to the interest and importance of the subject that Dr. Glover Lyon has brought before us this evening. For, if we exclude intemperance in drink, pulmonary consumption is undoubtedly the great cause of loss to these offices.

We judge of liability to phthisis chiefly by two series of facts; first, by the physical condition of the applicant, his age, height, and weight, the development of his chest, and the way in which his various organs are working; and secondly, by the forecast thrown on his future by his family history.

Under the first head I confess that I thought the spirometer had gone out of fashion. This instrument was once found in most insurance offices, but now if one is still extant it is usually in a state of dusty neglect. Dr. Hutchinson, its inventor, believed that the "vital capacity"

as determined by it corresponded in healthy persons with their height, apart from the size of the chest, or muscular strength. But it appeared to me that there was one great fallacy, in the fact that practice made so wide a difference. A man used it for the first time at great disadvantage, whereas one accustomed to it blew much more efficiently and got a higher figure.

With respect to family history, I do not fully agree with the recommendation to classify applicants, not only according to the deaths from phthisis of father and mother, and brothers and sisters, but also of other blood relatives. Regret was expressed that we often cannot ascertain the cause of death of these more distant kinsfolk, uncles, cousins, and so on. Now I venture to think that the best insurance practice is to use a broad and general classification,—pathologically a rough one. Any attempt to classify too narrowly will fail, if only because you cannot get numerous cases enough to exclude accidental results by averages. In fact, experience in insurance practice has led me to distrust minute differences in family history when the history is often fallacious, just as I distrust minute pathological differences when the diagnosis is often fallacious.

First, there are sound lives with no trace of phthisis in the family; then there are the uninsurable, from some personal defect in the chest or from a bad family history; and thirdly, between those two classes are those lives which, themselves healthy, must be loaded. If both parents have died from phthisis I do not think that we can recommend assurance, unless the proposer is safely past forty, or has an unusually anti-phthisical build and appearance. The same may I think be said if half the brothers and sisters have died from consumption. But if the person is in good health, and has reached a good age, say 40 to 50, and only one of his parents has died from phthisis, we had better admit him in without an additional premium. We are told by Insurance Offices that small additions to premiums lead to almost as much trouble and expense as large ones, and that a small addition is often, after all, not insisted upon. The more one sees of insurances the more one is inclined to say, let in the proposer without additional premium, if it can fairly be done, or reject him if it is necessary, or if you let him in with addition let it be a considerable one, and let its amount depend rather on the age of the proposer than on slight differences in the degree of drawback.

In the tables before us tuberculosis and pneumonia (chronic) are very properly classed with phthisis; but surely we ought to add bronchitis, and in a good many cases pleurisy. People do not die of bronchitis unless they are very young or past middle life as a rule (the rule is not without exception), so that deaths which are put down to bronchitis ought almost certainly in persons under 50 to be regarded as really due

to phthisis; almost the same may be said of pleurisy. Indeed if we exclude acute pneumonia I am inclined to regard all cases of pulmonary disease, in which there is not very definite and distinct medical evidence to the contrary, as belonging to the group of phthisis.

Then as to childbirth, Dr. Lyon has spoken of death of the proposer's mother in child-bed as being an unfavourable element in his prospects, since it shows a certain weakness on her side. But I feel sure that many of these deaths "in childbirth" are really cases of phthisis. Again and again one asks a patient "How long after your birth did your mother live?" "Two years, but it gave a shock to her system which she never got over." That is to say, the childbirth was the beginning of the symptoms of phthisis shewing themselves. Or a woman has phthisis and she becomes pregnant. Her pulmonary disease is at a standstill until her delivery, and then breaks out and rapidly proves fatal.

I suppose we have all met with the similar euphonism of ascribing phthisis to "accidents." If a man appears before you whose father's death is described as "accidental," and you ask "what was the accident?" he says, he broke his leg; you ask, how long after did he die? and you are told perhaps, "Well, he never seemed strong again afterwards, and he died in two years." Had he a cough? "Yes, he had." In fact he died of consumption, and he broke his leg two years before; but the former event had nothing to do with his death. In one case that came before me, the proposer's father died from an "accident." On further inquiry it appeared that the accident was sleeping in a bed with damp sheets. He thus caught a chill and he never recovered.

There is only one other point that I will refer to. When additions have been made on account of a family history of phthisis, we sometimes have applications referred to us for the additions to be taken off, because the proposer says "I am now over forty (or perhaps only over thirty) and I am still in good health." That is an unreasonable demand. We do not have applications made by people who die from phthisis to have their insured sums reduced. If a person does not die of the disease he cannot fairly claim to have the addition taken off, because there are a number of other people who pay extra like him but who die prematurely, and his increased premium is needed to counterbalance the losses they occasion. If he only paid for a term of years—a mode of insurance also in use—he must of course pay a very much larger addition. But it is quite clear that if an office only insured those loaded lives, and took off additions from those who had not died, say in ten or twelve years, they would have large sums to pay for those who died, and no adequate fund coming in from those who survived,

Dr. J. E. Pollock: Only those who have had to deal with a large mass of facts such as are put before us in Dr. Lyon's paper know how much time is thus occupied. I think we may agree that heredity plays a marked part in phthisis. The statistics of the Brompton Hospital, published some years ago, showed that 38 per cent. of patients showed the taint of heredity in parents. Parental heredity is the most potent and marked agent in the production of phthisis; but I believe heredity goes back many links in the chain, and our grandparents may have something to do with it. Two great agents modify that heredity. One is age, and the other is the natural physical condition of the individual. As regards the first, no doubt the age has been pushed on at which we medical officers have been accustomed to think phthisis is liable to occur. As a rule we remit the extra premium when a man gets over 40, but I believe that these figures brought so ably before us will modify that view. Dr. Christison, of the Scottish Widows Fund, says that the greatest mortality of selected lives has been between 30 and 40. That is, the selected lives which died from phthisis dropped out at an earlier age than the Registrar-General's death rate of the whole population gives it. But these are remarkable figures given in Dr. Lyon's paper. We must now wait till the age of 45. A much more important agent in modifying heredity seems to be the physical condition of the individual. If a man comes before you with a large chest, weighing 11 or 12 stone, with a ruddy colour, of temperate habits, following a healthy occupation, but having had one parent die of phthisis, and his age is 25 or 30, you say, this is not the kind of man to fall a prey to phthisis. We go on day by day taking men, and judging of their liabilities by the condition they are in when they present themselves. I uphold that as a good rule, and I believe it is the rule of Dr. Pye-Smith and other gentlemen. We know the man of delicate build, of small chest, shallow, and with anterior movements limited; more or less shabby, with flabby tissues, a man who takes no exercise, but rides a bicycle once a fortnight; all his brothers and sisters have died of phthisis, and we do not care to take him on. But a man of strong physique, of robust build, is not likely to die of phthisis, whatever his parentage may have been.

So that we officers acting for the interest of great companies can have, as Dr. Pye-Smith said, no precise rules—adding three years for a parent, and two years for a brother and sister, and so on. You cannot classify your cases in this way, because in practice we do not find that they classify themselves: we bring our knowledge and experience and such judgment as we have formed in selecting cases to bear, and I believe we are generally right. It is not a rule of thumb, but it is one of experience, knowledge, observation, and reading. I believe Mr.

Manly is right in saying that he does not think much of a brother or sister dying from phthisis when the parents have not done so. If such a man is robust and healthy, I say we may accept him, but if he is a delicate-looking fellow we make an addition to the rate.

Now as to the form of additions to lives which are not first-class, it is not a part of our business, perhaps, but we have to think of it. To add a very small percentage, I quite agree with Dr. Pye-Smith, is a very stupid thing to do. It vexes the applicant and injures the office, and he goes to another office and gets in there perhaps without any addition. We are employed to prevent loss to the company. It is a monetary contract. The object is to insure, either for a certain age or on death. An addition of 3s. to 4s. will not do any good, nor will 5s. do any good. I never add less than 10 per cent. In the case of a young man of 30 who has had phthisical parents, I invariably add 10s. to the whole liferate, and there is a table by which the equivalent sum can be added for endowments. If you add a less sum I think it only vexes the proposer, and sends him away to another office, where perhaps he does not pay that addition.

One word more. I think that every life of every description has a value and a price, if we could arrive at it. Even diseased lives have their price, and their actual value. As the medical advisers of offices we have to find out what the cases that appear before us will bring in the market. The offices have entered on entirely new views from what they had 20 years ago. For instance mitral disease of the heart is insurable now. We ascertain what the state of the heart is, whether there are any symptoms, and whether the heart is dilated or its walls hypertrophied, and no doubt there is a price which would compensate the additional risk to the company. Then take cases of albuminuria. They were formerly not accepted, but Saunders' and Johnson's investigations in other cases have proved that in certain individuals you may find albumen this month, and you may not find it next month. It is due to dietary causes, and wants the features of Bright's disease. cases of temporary glycosuria, which you often find in gouty subjects, but where there are no actual symptoms of diabetes. That is now insurable when sugar is no longer in the urine. I have recommended such cases for acceptance, and up to now I have not had an insurer die from it. I daresay also that a case of phthisis with a cavity in the lung is insurable, only we do not deal with those cases; but if we could only make out its value, I have no doubt it would be insurable. that people with a limited cavity in the lung often live for a long time. To-day a gentleman called on me with a cavity in one lung, which had been diagnosed 18 years ago by one of my colleagues. He was in robust health, a clergyman and a great preacher (not in London).

was not young, but of good physique and large chest. I asked him, "Do you ever go up hills?" He said, "I go up hills in Scotland, and row a bit sometimes." I felt his muscles: they were firm, and he will preach away for many years. Surely, if we could have the means of judging the probable length of that man's life, we might insure him; but we have not got yet to that precision, by which we can weigh in the balance the exact number of years a damaged man has to live. But we should select men by their physical power; by their nerve force, the force that can resist disease, and if such men come who have even had phthisical fathers or mothers, they are insurable. I have an instance in my own case. My mother died of phthisis near the time of my birth. Now I have passed the phthisical age, I am sorry to say, but my brothers and sisters did not die of phthisis. Cases must be judged by their own facts.

Dr. Symes Thompson: Dr. Pollock's observations have been, I think, extremely interesting. He has pointed out that in cases of well-defined lung disease we may sometimes regard the case as insurable. In distinct well-defined cases we are more likely to be successful in our prognosis than in seemingly trivial manifestations of imperfect health. The Secretary of my office a few years ago collected statistics which, although never published, I shall be glad to place in the hands of Dr Glover Lyon. Those statistics show that many forms of imperfect health, such as "leanness," "stoutness," "plethoric habits," are very bad in their results, especially excessive corpulence.

I took occasion while at the "Equity and Law Office" to-day to ask for the papers of a case I passed six years ago. It was a case of established lung disease, of the kind Sir Andrew Clark describes under the term of "fibroid." When I passed him there was a distinct cavity at the top of the lung; I believed the case to be very chronic, and I was bold enough to pass the case, although with some hesitation, and made arrangements that the whole sum should be paid in a small number of years. But I think the right way, from the medical point of view, to deal with these cases is to let each annual payment represent a definite propertion of the sum insured. If it is to be paid in ten years let each payment represent a tenth part. If the insurance is for £1,000, let £100 be secured each year for ten years; or if it is £500, let £100 be secured each year for five years. Upon this plan we may accept cases of very distinct disease, because we know every particular. But in a vague condition of ill health I do not think we should be justified in taking such a risk.

As to the large question of heredity, it is difficult to solve the most salient points. My experience shows that what Dr. Glover Lyon has

said is quite true. Parental inheritance is more pronounced in its evil effect than the collateral, but recent evidence on the subject of heredity points to the fact that we inherit more from our grand-parents than from our parents; and that our parents have exceedingly little to do with us! Again, what is transmitted is not an inheritance of phthisis so much as an inheritance of vulnerability, which may shew itself in phthisis or other life-shortening disease; a man may escape phthisis, and may say, "I have passed the time of life when there is danger from phthisis;" you may tell him that he has not escaped from the deteriorating influence which the inheritance has brought about.

As to childbirth, my own impression is exactly that of Dr. Pye-Smith, viz: death from childbirth generally means death from consumption.

As to the question of hæmoptysis I should like to say a word. The experience of my office has shown that hæmoptysis has proved a very dangerous symptom, especially when associated with an imperfect family history.

DR. SEDGWICK SAUNDERS. I agree absolutely word for word with all that has fallen from Dr. Pye-Smith; indeed, a better epitome of the scope and duties of medical examiners for life assurance purposes could not possibly have been put in so few words.

With regard to Dr. Glover Lyon's paper I find it difficult to carry in my mind all the figures, but I would object first, that his conclusions have been drawn from too limited an area. Mr. Manly, one of the most accomplished actuaries in the City of London, was candid enough to admit as much at the beginning of the paper he read last year at the Institute of Actuaries. At the Mutual Office, where I was Examining Physician for 25 years, we had an experience altogether insufficient to justify one in generalising upon a question so vital to the interests of the Company, and I do not think that circumstances have altered much in this respect since Dr. Glover Lyon succeeded me.

In mathematics you can prove almost everything—that Napoleon never lived, and that there never was such a man as Hannibal. But our duty is to look at the question from a practical point of view. Dr. James Pollock has almost taken my breath away. I thought that the business of a medical examiner was to select good lives, but Dr. Pollock and many gentlemen of equally high attainments are aiming at doing something more than life insurance selection. In this they are rather trenching on the work of an actuary, and telling us how to overcome the difficulty of accurately gauging the commercial value of damaged lives, the effect of which must be to make the "worse appear the better causes." I contend that a man even who has had the vast experience of Dr. Pollock, may not be able to foretell exactly what will be the out-

come and duration of diseased conditions. My idea of the duty of an examiner to a Life Insurance Office is to select good lives, and I contend it is rather gambling with life and death to say how long a blemished life shall live, and when it may be expected to fall in. I entirely agree with Dr. Pollock with regard to the enormous preponderance that is to be placed upon the question of physique. I think that stands out foremost to every man's eye as he examines the case before him. Indeed the published report of sixteen of the Scotch offices went to shew that of 16,000 persons assured, the preponderance of claims resulting from the defects of personal health over those connected with defects of family history was very marked.

Taking one or two of the illustrations that Dr. Pollock has brought forward as to cases of albuminuria, I am old enough to recollect that albuminuria at one time was considered a bar to all life insurance, and I am obstinate enough to think even now that recurring albuminuria should be a cause of rejection. I have watched cases for months and months, in which albumen came down at certain stages of digestion, but ceased when digestion was completed. In others there is a time when digestion is either over or just commencing, when there is no albumen, but two hours after you may find it. The subjects of this defect have invariably been pallid and neurotic men, battling with business anxieties and other worries, but these do not lessen its pathological significance, and I have always been taught, and firmly believe, that whether it is a question of assimilation only, or consequent upon structural change of kidney tissue, a man of that kind is not as sound and valuable a life as a man who never has albuminuria,—all other things being equal. Such a man may be exposed to severe weather and get a cold in his loins, which may affect his kidneys, and run to nephritis.

In the same way you see cases of glycosuria resulting from a debauch over night. Jews, who are large eaters, get it very often from this cause. Nothing justifies the acceptance of such a life, except when after repeated examinations at frequent intervals he is found free from sugar. One word respecting agents. With urine containing albumen, or excess of urea, or inosite, your copper test will yield a brown reaction,—but assuming grape sugar to be present, you do not get down the suboxide of copper until the two former substances are eliminated. This is one of the pitfalls by which the unwary may be led into error.

As to hæmoptysis, my own experience is like that of Dr. Symes Thompson. I have sometimes seen small hæmoptysis, and the smaller it is the greater sometimes is the danger. Occasionally with a free bleeding a case may go on for a long time, but I hold it a bar to life insurance. As to the value of the spirometer, it is a very pretty toy,

but a thing I have given up for some time. One man can blow it up to a certain point after practice, when at first he could hardly move the dials.

There is another point that medical men are rather apt to run a little riot at, and that is any attempt to judge the value of lives which are not absolutely sound. It is almost presumption to say that a man in whom we discover a disability shall, or shall not, live for a certain time. That is the rock a great many medical examiners split upon. I call this the assumption that borders on presumption. I say our part is not to see how much risk we may safely run, but to pass safe lives. There are cases in which heredity comes in as opposed to a man's own physical condition, and a fair way of meeting these is the adoption of the endowment principle. An endowment policy represents an inverted triangle or pyramid in which the risk of loss to the office is running off every year. Thus you can divide your inverted cone into ten parts. The first year obviously involves the greatest risk to the office, the next is less, and so on down to the vanishing point at which the bargain The premiums for these endowment policies are necessarily heavy, and are so calculated that in a 10 years' policy the payment of seven premiums with compound interest clears the office from loss, and the rest is clear profit. Another way, to put the matter roughly, is this. The man desirous of insuring may be very good for the next ten years. Who shall say what becomes of him after that, when changes in tissue go on as age advances. You conclude that man may go on to the age of 55, but beyond that you do not accept his proposal. So that is a case in which you may adopt the principle of terminable endowments, and in proportion as the doubt is great in your mind shall be the idea of how long the endowment should run. I do not believe in anything beyond 15 year endowments after a man is 50. That seems to me a very satisfactory way of meeting the case, not merely of insurers but in marriage settlements, where a man's life insurance is an essential element for his success in life. I again guard my opinion by repeating that even with endowment policies the man must be a good average life personally.

Dr. Arthur Davies: There is one point not alluded to in this discussion, to which I should like to draw attention, namely, the *position* of the applicant in a family having a phthisical history. It is, I think, well known that the younger members born of phthisical parents are more likely to die than the elder ones. This, therefore, is an important fact to bear in mind in passing an applicant with a phthisical family history, and should be applied in practice.

MR. MANLY: Mr. President and Gentlemen: I came here more as a

listener desirous to learn something from this learned body, rather than to be an instructor, or to discuss the questions which might be raised. I think that in many cases the conjunction of the actuary with the medical officer in investigating many difficult points would lead to very valuable conclusions, and such as could not be attained by the members of either of those professions singly. Naturally our mind, our thoughts, our daily lives, are directed into different channels. We are concerned more with the arrangement and classification of the dry bones of science. You are more concerned with the living, and the applications of science to cure or prevent diseases; and where you are retained for an insurance office, you are expected to protect us from risks which are outside the scale of mortality on which we base our calculations.

The difficulty of dealing with this subject from an actuarial point of view has been very great, on account of the numerous combinations which have to be unravelled, and the necessity, therefore, of making these various classifications, in order to trace the effect of the hereditary taint or whatever you choose to call it—the vulnerability or susceptibility to this disease—according to the degrees of relationship. I consider that Dr. Glover Lyon and myself have produced some valuable statistics, although not sufficiently large for the establishment of a fixed rule. It is curious to notice, however, that the deviation of my curve from the normal curve has a close relation to the force of consumption at the various ages, according to the Registrar General's returns. we made an a priori assumption that the force of mortality from consumption was correctly represented by Dr. Lyon's curve, derived from the Registrar General's returns, we should naturally draw a line to represent the mortality among those who had a consumptive family history similar to the one represented in the upper diagram.

Dr. Pye-Smith, in objecting to this very minute classification, said it was difficult to differentiate in individual cases. It is so. For the purposes of scientific investigation it is necessary to classify; but for business purposes we make large combinations. We know from investigation that butchers as a whole are not such good lives as clergymen, but still we put butchers and clergymen into the same class if they are sound and healthy when they present themselves for examination. There is a tendency at the present day to remove the extra charges which have been made from the commencement of life insurance for climatic risks. If that tendency is extended, and we allow a person to go to India without charging him an extra premium, it is my opinion that we may very well throw into the general class of healthy lives those whose parents or relatives have died of consumption, always provided that you gentlemen are satisfied that he is a sound and healthy life when he presents himself for examination.

Dr. Lyon in reply said: In order to determine the extra risks accompanying the different varieties of family histories it is necessary to treat the cases in groups; it will then remain for the medical officers to deal with individual cases according to any special features they may present.

NOVEMBER 9th, 1892.—Clinical Evening.

BAG FOR DILATING THE CERVIX UTERI BY WATER PRESSURE, INVENTED BY CHAMPELIER DE RIBES.

Exhibited by Dr. G. E. Herman.

The bag differed from Barnes' bag in being made of inelastic material—waterproof silk, so that it simply filled up without expanding. Barnes' bag required several manipulations as one size after another was used; this was applied once for all. It could be introduced into any cervix which would admit the finger, and when its work was done the child could be immediately delivered. Further, it was introduced by means of a forceps, folded up instead of on a sound; the forceps was then disarticulated and removed. It was conical in shape, having the end downwards, and dilated the cervix much like a bag of membranes. thought it would prove very useful in placenta prævia and in all cases in which Barnes' bags were applicable. Where a pelvis was much contracted it might be necessary to let a little water out, as the pelvis might not allow the fully expanded bag to be readily expelled.

In answer to Messrs. F. R. Humphreys, Bowkett, and Poland, Dr. Herman replied that some bags were made of canvas, but it took up more room. The bag could be obtained through Messrs. Krohne and Sesemann.

SUPERFICIAL ULCERATION OF THE POPLITEAL SPACE.

Case brought forward by Dr. J. S. E. Cotman.

A man, aged about 35 years, had in 1891 a carbuncle in one popliteal space. This healed, and four months later a patch of ulceration appeared in the same spot, and had

gradually spread, now presenting a large area, four inches in diameter, undermined and scalloped at the edges, and partially healed in the centre. Confinement to bed, small doses of opium, and the application of phenol had been of only partial utility.

Mr. R. G. Tatham and Mr. J. Poland thought the affection was syphilitic. The man had had a chancre and secondary eruption, and the situation of the sore was rather characteristic of syphilis.

Dr. Cotman said that hitherto the patient had denied ever having had a chancre, he had no scars, and so he had not used anti-syphilitic treatment.

LOCAL SWEATING AFFECTING ONE SIDE OF THE FACE.

Case shewn by Dr. Thomas Marshall.

A man about 45 years of age. The symptom dated from nine years ago, when he was laid aside by a severe attack of typhoid fever for seven months. It consisted in free perspiration on the right side of the face and part of the side of the head, sometimes extending to the axilla, and it occurred under various influences—especially severe concentration of thought, the distraction of several things claiming attention at once, worry with the men in his employ—also drinking tea, and particularly a glass of whiskey. He had always been liable to free general perspiration, and was of a nervous, irritable temperament, especially of late years. Dr. Marshall had a second case under observation and hoped to have brought it. There was no history of parotid suppuration as in the case shewn by Dr. Cotman last year (see Transactions, 1891-2, p. 86), and which he had illustrated by so full a record of other cases.

Dr. Hingston Fox referred to the common occurrence of flushing and morbid blushing in neurotic subjects, of which this seemed an instance, affecting, however, one half only of the head. He had observed in children sweating of limited portions of the face—one side of the nose, or part of one cheek and brow—generally in children with unstable nervous systems, excitable, and subject to headaches. He had brought before the society a hysterical young woman with local hyperidrosis affecting a limited area in one fore-arm (Transactions, 1889-90, p. 44).

Dr. Cotman said that in his case the perspiration occupied a much smaller area—the cheek and lower part of the temple—the man had had a parotid abscess, and he thought there was some blending of the fibres of the chorda tympani and auriculo-temporal nerves.

Dr. Marshall stated, in reply to Mr. F. R. Humphreys, that his patient had had syphilis.

GRAVES' DISEASE.

Case exhibited by Dr. Arthur T. Davies.

Mary A. C., aged 43 years, born in Bucks., married, had seven children. She stated that 23 years ago, without apparent cause, palpitation of the heart commenced, followed by prominence of the eye-balls; about one year later the gland in front of the neck began to enlarge. The usual triad of symptoms characteristic of the disease were thus well marked; tremor also was present. The heart showed a systolic apical murmur, with accentuation of the pulmonary second sound and some hypertrophy. The interest of the case lay in its long duration. She stated that her twin sister was affected in the same way.

Dr. F. J. Smith suggested that the mitral insufficiency might be keeping up the mischief. Prognosis in this case was surely hopeless, but they generally recovered in months or years.

Mr. Bowkett referred to two cases. One, a man, died at 34, becoming more and more breathless: the second, a woman, had the disease for five years, and it had become fairly stationary.

DR. James Galloway said that in young acute cases a fatal termination was not very uncommon. He had made an autopsy on a young woman of 22, who died exhausted, with venous congestions: the thyroid gland was simply enlarged. The high blood-tension was interesting, especially in connection with the headaches, and suggested that aconite might be useful.

Mr. Poland had seen two cases in which the symptoms continued well marked after eight years. Some cases showed signs of insanity.

Dr. Hingston Fox noted that a good many cases fell into a state of poor nutrition, and phthisis or other wasting disease came on. One case under his care had died, after two years, the heart worn out by long continued palpitation—there was dilatation of both sides of the heart, and extensive dropsy. He alluded to the retraction of the upper lid, and the failure of the lid to follow the movements of the ball: no clear explanation of these symptoms had been offered. Stellwag had stated that winking in these patients was infrequent.

Mr. Denton Cardew had had two deaths in the past year; one case of seven years' duration, terminating in diabetes; another, in influenza, with the exhausting diarrhea which often occurs. Dr. Clifford Allbutt had recorded a case of this kind, which the friends thought was one of cholera. He could quite imagine that the disease might last long. He would not regard the present case as hopeless; she had lived a hard life; rest and treatment would produce great improvement. When cure took place, you did not get rid of the thickening of the thyroid or of the eye conditions. Every case started in a strongly neurotic diathesis. He could produce cases in which the pulse-rate had been reduced from 150 to 80 per minute, but it became exaggerated under excitement. In the present case the pulse was 112, probably 90 might be the usual rate: it was always increased at the first interview, and this had to be allowed for. The affection of the levator palpebræ had lately been ascribed to dilatation of the blood vessels supplying the muscle. When there was marked proptosis with cedema of eyelids, you could be sure it would diminish, because it was due to retro-ocular edema. As to the pathology of the disease, the sympathetic and the pneumogastric had now been given up; the medulla remained, and atrophy of the restiform body was now advanced as the cause.

Dr. P. Abraham, on microscopically examining cases after death some years ago, had found changes in the sympathetic ganglia in the neck, and in the fat cells at the back of the orbit;—not only hyperplasia, but degeneration.

Dr. Glover Lyon referred to Dr. Hector Mackenzie's explanation of the cause of Graves' disease as a condition minutely resembling that caused by fright.

DR. DAVIES stated, in reply to MR. F. R. HUMPHREYS, that the urine contained no albumen when tested. Palpitation was the first symptom, then exophthalmos, then the goitre. Virchow had recorded a case in which protrusion of the eyebalis was produced in 24 hours. Dr. Ransom had injected thyroid juice in a case of Graves' disease without the least effect.

EXTENSIVE CONGENITAL HYPERÆMIA WITH HYPERTROPHY OF THE LEFT UPPER EXTREMITY.

Case shewn by Dr. Glover Lyon.

A woman aged 30 years. The area included the whole extremity except some small patches, the shoulder, the upper part of the chest in front nearly to the middle line, and reached half-way to the spine behind. The skin was bright red at parts, elsewhere bluish-red, varying somewhat from moment to moment: the flush was entirely removed by pressure. The surface temperature was increased, and the

skin felt smoother than on the opposite side. The veins of the limb were much enlarged, and the muscles and bones from the shoulder downwards were increased in all their dimensions, the chief increase being in the fore-arm. The distance from the acromion to the end of the middle finger was greater by $1\frac{1}{2}$ inches than on the right side. Patient was not left-handed, but her left arm felt to her the stronger: it often felt to her more chilly than the other. The suggested explanation was, paralysis of the tonic vaso-constrictors of the part, leading to super-nutrition.

Mr. R. G. Tatham thought it might be a superficial nævus, and referred to a case which appeared to be caused by a fall during the pregnancy of the mother.

Dr. Glover Lyon pointed to the enlargement of the deeper structures as contradicting this diagnosis.

NOVEMBER 23rd, 1892. MYXCEDEMA.

Two cases shewn by Dr. Hingston Fox.

(1).—Ann T., aged 54 years, married, 11 children, five have died; came in March, 1890, complaining of pains around the waist, a sensation of cold in the back, and tiredness: appetite poor, and bowels costive. She was noted as obese, with dry, rough yellowish skin, and soft loose tissues, especially full above the clavicles; the hands were large and thick, and the voice hoarse; there was rhonchus on deep breathing. The urine was pale, weakly acid, s.g. 1017, and contained a trace of albumen,—cloudiness on adding dilute acetic acid, increased on boiling. The diagnosis was made of climacteric malaise (menopause six years ago), and the words were added, "some similarity to myxedema." She came up again in April last, complaining of pains under the scapulæ and in the arms, and her symptoms were now much more pronounced. She spoke slowly, and was slow of comprehension, with bad memory: rather deaf; the skin very dry and reddened; the legs ædematous. The thyroid gland could not be felt. She had grown very stout.

(2).—Eliza H., aged 42 years, married, four children, one stillborn, besides four or five abortions; had been under occasional observation since October, 1885, suffering from hæmatemesis, hæmorrhoids, hysteria, rheumatic fever twice, etc. She was a tall woebegone woman, who had passed through much trouble, and was nervous and excitable. Her father had died of phthisis at 39, the mother of bronchitis and dropsy at 55; one brother, out of a family of seven. died of phthisis. The catamenia were regular and profuse. the appetite poor, and the bowels costive. On coming recently after $2\frac{1}{2}$ years' interval, the symptoms of myxædema were observed; thickened features, pale, dry yellowish skin, hair falling, hands swelled (this was complained of by herself, though it is not of great extent). Speech was rather thick and slow, taste nearly lost; spirits very depressed, everything seemed to be a trouble. The urine was concentrated, with excess of pigment, acid, s.g. 1029, no albumen or sugar.

Dr. Fox said that he brought these two cases that they might be examined prior to commencing treatment. They would also be weighed and photographed. Dr. Arthur Davies intended to treat the first by administering a powdered extract made from sheeps' thyroids, and he proposed to treat the second himself by the administration of the fresh thyroid glands.

Dr. S. Mackenzie said that the elder patient was a very typical case of myxœdema; the younger was not so pronounced, although the general condition was recognisable.

URTICARIA.

Paper read by Dr. Stephen Mackenzie.

Dr. Mackenzie first showed a boy aged 14 years, who had suffered from urticaria pigmentosa all his life. The disease was now quiescent, but there was no difficulty in raising well marked wheals surrounded by red areæ, on scratching his skin with the finger-nail.

Dr. Mackenzie then traced the succession of phenomena observed in artificial or factitious urticaria, and offered a

physiological explanation, placing the nervous centre of the reflex mechanism in the dense plexus of fine nerve fibres in the superficial layer of the corium. Local irritation, as from the bites of insects, clothing, &c., was a frequent direct cause of urticaria. In other cases this was indirect, as from the ingestion of mussels or other food; here probably a poison entered the blood, and affected the nerve plexus in the skin. The wide distribution of the eruption favoured this view; a case, however, had been recorded of one-sided urticaria, in a rheumatic subject. And Dr. Mackenzie had seen the disorder apparently affecting one arm only in a boy of 15. Urticaria also attacked mucous membranes, and was thought to give rise to asthma. A case of urticaria following the rupture of an hydatid cyst was described, a rare and singular phenomenon. It had also followed parturition and the passage of a uterine sound. Cases illustrating rarer forms of urticaria were then detailed.

- (1) Urticaria hæmorrhagica in a boy aged two years, after eating fried Dutch plaice; a broad dark band appeared around the abdomen.
- (2) Giant Urticaria in a man aged 37, after working in a hot vat, containing some chemicals. Very large fugitive swellings appeared during seven weeks over the surface of the body and limbs, but especially on the face, closing the eyes.
- (3) Chronic Urticaria, in a boy aged 14, following chickenpox; and in his sister, severely, for 10 or 12 years past.
 - (4) Urticaria pigmentosa, the case already shewn.

The treatment consisted in the discovery and removal of the cause and the mitigation of the effects. Aperients, when peccant matters lay in the digestive canal—stomachics, and bland diet, were in most cases sufficient. When obstinate, the disorder was assuaged by soothing baths and applications of glycerine of lead; internally, antipyrin had been found most useful.

THE PRESIDENT alluded to the great rarity of Urticaria pigmentosa. In a case in a very young child the disorder was at first thought to be crythema. It had been stated that urticaria was common when

erysipelas was prevalent. When it attacked the face there was great swelling. Urticaria sometimes followed sea-bathing.

Dr. Pye-Smith had highly appreciated the paper, but with respect to the pathology of urticaria, doubted whether it could be regarded as a peripheral reflex phenomenon. The indirect causes probably acted reflexly through the cord, whilst direct irritants might produce their effect by their influence on the blood-vessels themselves. relation existed between urticaria and acute articular rheumatism. There was a close connection between urticaria and erythema, so close that he would regard them as varieties of one disease. They often existed together, both were due to direct irritation and also to reflex irritation, as from the ovaries and uterus or from the stomach, both were acute or sub-acute, rapid and fleeting and leaving no trace, excepting urticaria pigmentosa, and its long course was made up of many little There was a tendency also in both to edema and to hemorrhage (compare erythema nodosum and peliosis rheumatica), and both often attacked children. In all these points, apart from anatomy, they showed a true connection. In treatment he had been less successful than the writer of the paper; his remedies were few and they often failed. Too often the apparent source of irritation was removed, and yet the urticaria remained. He agreed in the benefit of the external application of lead, and the internal use of bromides, mild alkalies, and laxatives; sometimes of salicylate of soda, or of belladonna, etc.

Dr. Percy Warner had found that certain forms of urticaria were associated with rise of temperature, and considered that these were rheumatic in origin. In one case acute urticaria followed sore throat, with violent attacks also of asthma and of vomiting; alkalies and sedatives were used. After a week or two the patient developed an attack of acute rheumatism, and all his disorders were removed under salicylate of soda. More lately, in a woman, he had treated urticaria at once with a salicylate, and it had subsided; he left off the drug, and acute rheumatism appeared. He had seen a striking case of erythema nodosum with a high temperature, under a mixed diet; rheumatism came on, and he restricted the diet and increased the salicylate with a good result. He would like to know whether cases of purpura with a high temperature had a like pathology.

Dr. F. J. Smith asked whether Dr. Mackenzie had any experience of urticaria caused by the stings of jelly fish. When bathing many years ago at Llandudno, he was himself stung on one arm; very large wheals were here raised, but in addition there was intense irritation of the entire skin from the sole of his foot to the crown of his head.

DR. JAS. GALLOWAY had had an experience lately bearing on the relation between urticaria and erysipelas. He was asked to see a rabbit which had died of erysipelas, and found what appeared to be a wheal on the mucous membrane of the stomach, with extravasation of blood at the centre.

DR. G. NEWTON PITT had seen two cases of urticaria in men who were attacked whenever they had to do with ipecacuanha. Another case was of a girl, who had been eating sausages; much swelling of the

face came out, and hæmorrhages: he felt very anxious. Soon effusions into the wrists and elbows appeared, which passed away under salol and salicylate, though hæmorrhagic patches on the skin kept recurring. He drew attention to the value of atropine in chronic urticaria. Opium or morphia caused in many subjects a factitious urticaria; this was inhibited by taking atropine. He had found the latter useful in preventing attacks.

Dr. Mackenzie, in reply, agreed as to the close pathological relationship between urticaria and erythema. In some cases urticaria was definitely of rheumatic origin, but numerically the instances were very few. Erythema nodosum was, however, in his belief a direct manifestation of rheumatism. All acute cases of urticaria were attended with rise of temperature; he could not put these in any separate class. He had put forward the theory of the cause acting on the nerve plexus in the skin on merely clinical evidence, and it was fully open to question. But the irregular occurrence of the eruption and its general spread over the surface made it probable. Treatment was, he admitted, often unsuccessful: cases had been under specialists for many years. But a nightly dose of antipyrin had certainly given relief.

DECEMBER 14th, 1892.- Pathological Evening.

THE INFLUENCE OF PROTOZOA IN CERTAIN DISEASED CONDITIONS.

Communication by Dr. James Galloway.

[See, for a fuller account of these researches, the Morton Lecture, 1893, reported in the *British Medical Journal*, 1893, vol. i., p. 217, and *Lancet*, p. 231.]

The name "Protozoa" being the most general, was preferable, as certain of the parasitic forms were as yet in considerable doubt, so far, at least, as their classification was concerned.

Taking the well-known psorospermic disease of young rabbits as the basis of his remarks, the speaker described the main symptoms of this affection as observed in the young and in the adult animal. The emaciation, severe illness, and acute enteritis were mentioned as easily recognized signs of the disease.

Passing to the protozoon, which is the cause of the affection, the main stages of the development of the parasite (Coccidium oviforme, Leuckart) were described. The lesions caused by the parasite in the liver and in the intestine were referred to in detail, and the importance of the condition, as giving

an example of the infection of epithelial cells by a parasite which undergoes one stage of its development within the epithelial cell, was emphasized. The method by which the parasite gains access to the cell was suggested to be either by movement on the part of the invading organism alone, or possibly aided by movement on the part of the epithelial cell itself. The stage of development undergone external to the body was said to be of great importance in reference to the infectious, rather than contagious character of the disease. The close resemblance of the growths observed in the organs of the host to adenomatous tumours was shown. Coccidial infection in the human subject was alluded to.

The question of protozoa occurring as parasites in malignant tumours in the human subject was then considered, and many forms of epithelial cell-inclusions described as parasites were noted, and arranged roughly as follows:—

- 1. The invagination of one epithelial cell within another.
- 2. The occurrence of invading leucocytes within epithelial cells.
- 3. The endogenous formation of cells, possibly by direct division of the nucleus without division of the cell body, or more probably caused by the asymmetrical karyomitosis of the cell nucleus, giving rise to several masses of chromatin bodies within one cell wall.
- 4. The various forms of degeneration of the cell body or its nucleus, including such degeneration as the colloid, etc.

Many of the so-called parasites were described as being caused by one or other of the processes mentioned.

The consideration of certain other cell-inclusions—those described by certain observers abroad (Soudakewitch, Foa, etc.), and by Dr. Ruffer and Mr. Walker in this country—was then entered on. The speaker said that he was able to confirm in almost every particular, the appearances which had been described by the authors mentioned. The occurrence of the inclusions within the cell body, occasionally also within the nucleus itself; the structure of the inclusions, consisting in the adult conditions of a very distinct capsule enclosing

one or more very obvious, brightly staining bodies; the radial striations passing from the periphery towards the centre; the variations in size indicating various stages in growth; the completely distinct staining reactions shown by the inclusions, when compared with the nuclear chromatin of the epithelial cells and its degeneration products, were mentioned as clearly differentiating their bodies from any form of cell degeneration, and guiding to the conclusion that, in our present state of knowledge, these inclusions must be regarded as parasitic protozoa, probably having very distinct effects on the epithelial cell growth, and possibly even on the causation of the malignant tumours in which they have been found.

The importance of careful histological methods was strongly emphasized, and many of the doubtful accounts of "Cancer parasites" were adduced as being partly due to the imperfect methods of preparation adopted by the investigators.

The demonstration was illustrated by drawings, by the use of the lantern, and by microscopic preparations.

Dr. Armand Ruffer expressed his entire agreement with the author of the paper, to which he had listened with the more interest because Dr. Galloway had formerly been sceptical as to the existence of these protozoa. He had himself lately done some work in investigating the development of the parasites. He was at one time doubtful as to whether they were ever present in the nuclei of cancer cells, but now, with more perfect methods, in many specimens of cancer which Dr. Plimmer and he examined they could see the intranuclear form of the parasites. It first appeared as a little round body, staining with hematoxylin, the tissues being hardened with osmic acid. The interior of the nucleus was then found to lose its ordinary delicate reticulated appearance and become blotchy. Then the parasitic body approached the periphery of the nucleus, and finally was found to lie free in the protoplasm of the cell. There might be many, even twenty, of these bodies in one nucleus, and in some cases the latter actually burst and they were all set free. He knew of nothing in the range of human or animal pathology which would correspond to this unless it was a parasite. They had been able to see the living parasite in fresh cancer preparations. For this purpose some juice was scraped (after removal) from a rapidly growing cancer of the breast of a woman, and placed in normal physiological fluid on the stage of a microscope. He then saw a perfectly round enclosure, containing a central body of irregular outline sending what seemed to be pseudopodia to the periphery. The central body would become perfectly round, would draw in the pseudopodia and put them out on the other side. In fact it behaved in all respects exactly like a protozoon enclosed in a capsule. As to the part played by these

parasites in cancer, he could not speak with certainty, but he could say this, there was no reason against the supposition that some of these bodies might possibly be the actual cause of cancer. A nucleus was hardly ever seen dividing when the cell had one of these parasites in its interior; but on the other hand where a cell was seen dividing you would find a parasite near. When a cell contained parasites that cell died, and the cells in the neighbourhood multiplied. These bodies then, he would suggest, produced karyokinesis in the cells around, and thus caused the cancer growth.

After a few appreciative remarks from the President, Dr. Galloway briefly replied.

FIBROID INDURATION OF THE LUNGS.

Specimens shown by Dr. Arnold Chaplin.

These were taken from a woman aged 41. She had suffered from cough, summer and winter, for many years, with little abatement at any time in the year. She had never lost any great amount of flesh nor was there a history of previous illness. There was impaired resonance over both apices, back and front, with râles and bronchial breath sounds. No tubercle bacilli were found. The necropsy revealed the following conditions:—The upper lobes of both lungs, but especially the right, were to the feel hard and firm, the finger penetrating with difficulty, and there were old firm adhesions over both apices. On pressing the lung between the fingers one could feel hard lumps in its substance. On cutting into them, the apices of both lungs were found to be extensively invaded by an overgrowth of fibroid tissue; the lobules being clearly marked out by thickened white lines of interlobular tissue. The hard lumps referred to proved to be solid aggregations of fibroid material, with here and there small spots of softening in them. Running in from the main bronchus to the upper lobes were thick septa of fibrous tissue. In the right lung there were two or three small irregular smooth-walled cavities. The bronchi were all more or less dilated and thickened, though not markedly so. The vessels were also thickened. In the fibroid tissue could be seen small grey points, and here and there patches of calcified material. The lung tissue was deeply pigmented. The bronchial glands were enlarged, blackened, and contained masses of calcified and caseous material.

The kidneys were small and had undergone chronic interstitial change. The liver was enlarged and microscopically showed undoubted evidence of cirrhosis. It will be noted that the pleura was not very much thickened over the apices, and there was no evidence to warrant the conclusion that the process had started from the pleura and had thence extended into the lung.

Thus the lungs, the liver, and kidneys were the seat of fibroid changes, with nothing in the history to point to any special cause. It is not a local, but a general change, affecting many organs in the body, in fact, a typical example of general fibroid degeneration, due to a special fibroid diathesis, which predisposes the organs in the body to take on this fibroid change, when their nutrition for some reason or other is lowered. The case is similar to those which formed the basis of the well known papers by Sir Andrew Clark, Dr. H. G. Sutton, and Dr. Handfield Jones, in which these authors maintained that fibroid disease was not local, but general and constitutional, and, probably, due to a diathesis. It has been objected to this view that one too frequently finds but one organ affected by the disease. This may be so, but in syphilitic disease of the liver, is there any doubt but that it is the result of a general constitutional disease?

Clinically the fibroid disease is distinguished from tubercular phthisis by the following facts. It lasts an unusually long time, 12 to 30 years. There is little or no emaciation; it is set going by an attack of broncho-pneumonia, following whooping-cough, or comes on after prolonged bronchitis or after acute pneumonia; the subjects of this complaint are strong, well-built persons, there is never any elevation of temperature, and there are no tubercle bacilli to be found in the expectoration. After a time the urine contains albumen. The liver enlarges, and ædema and dropsy declare themselves, and the patient generally dies of acute bronchitis or an acute deposition of tubercle in the lung. After death the lungs, liver and kidneys show, all or some of them, evidence of fibrosis; sometimes this includes the heart, and skin. In the lung, the fibroid process generally begins in the inter-

lobular tissue around the bronchi and vessels, and from thence spreads in towards the alveoli, or it may begin in the alveoli and thence spread outwards. In these specimens, as already stated, there were patches of caseation both in the lungs and bronchial glands, and one or two irregular cavities in the lung. These will probably be looked upon as tubercular, but if so I regard them as accidental, and having nothing to do with the fibroid process which is clearly the predominating process. But this change may possibly have resulted from the starving of the fibrous tissue of blood, due to the gradual contraction of its fibres.

JANUARY 11th, 1893.

THE PRESIDENT announced that a portrait of William Cooke, M.D., had been presented to the Society by his surviving son, Mr. R. H. Cooke, F.R.C.S. Dr. Cooke took a leading part in the foundation of this Society, and worked in official connection with it for many years: his courtesy and assiduous devotion to its interests were highly appreciated. The President also alluded to the death of Sir Richard Owen, an Honorary Fellow of the Society: a resolution of condolence with his surviving relative had been passed by the Council.

ELECTRICITY IN EVERY DAY PRACTICE, ILLUSTRATED BY PRACTICAL DEMONSTRATION OF THE USE OF APPARATUS, ETC.

Paper read by Mr. H. W. Denton Cardew.

As a therapeutical agent, electricity needed to be prescribed in definite terms to prevent the scandal of electrical quackery.

A demonstration was given of the effects of electricity when used as a cautery, as in its application to the uterus by the Apostoli method.

The dry form of the Leclanché cell was described; it is indeed not actually dry, but the liquid is in the form of a

paste. Specimens were exhibited, as well as specimens of the Leclanché (wet), bichromate and other forms, and an explanation was given of the chief features of a battery adapted for every day use.

The application of electricity to the interior of the bladder for the relief of vesical atony was explained, and the author exhibited a soft catheter he had devised, in which the electrical current was conducted through the urine itself in the catheter and bladder.

The uses of electricity in paralysis were:—

- (1) To preserve the nutrition of the muscle; probably by dilating the blood vessels.
 - (2) To influence the seat of the lesion.

Whilst any lesion of a peripheral nerve, short of division, would recover, lesions in nerve-cells might be irremediable, and the value of electrical treatment of the seat of lesion was very doubtful.

For chilblains, faradism, using the secondary coil with fine wire brush, would cure in a week, and for prevention he advised the use of galvanism twice daily during the winter season.

In muscular rheumatism he had never known electricity to fail. Use the faradaic current energetically; galvanism may be applied afterwards to relieve the discomfort from faradism. The aching from lying in bed was similarly relieved, but it acted less well where the pain was not all muscular.

In early rheumatoid arthritis galvanism was a palliative.

In sciatica galvanism rarely failed. If there was tenderness on pressure *neuritis* was probably present, and treatment should be deferred until the pain had subsided.

Neuralgia of the 5th nerve was very obstinate to electrical treatment.

In hysteria, use faradism, a strong current.

Enuresis could generally be cured.

So could obstinate constipation, especially in women, in whom other means had failed. A lady, aged 38, always inclined to constipation, was relieved for the time by drugs, also by massage. He saw her daily for a week, and she was

then able to carry out the electrical treatment herself twice a year for a week or two, and found this sufficient to keep the trouble in check. The positive plate being placed on the back, a wheel electrode was made to follow the course of the large intestine: peristaltic action was produced. You could not dispense with drugs in addition at first, but gradually it was possible to do so. A primary coil with large wire was required, applied twice or once in the day. Sometimes you might place one electrode in the rectum: in that case use only faradism. In some cases, although there was little effect in evacuating the bowel, yet the abdomen became much smaller, probably by absorption of gas.

Dr. Hingston Fox thought a good case had been made out for the use of electricity in some disorders, such as lumbago and sciatica, which were apt to be opprobria medicorum; but in some, such as chilblains, he questioned whether the remedy might not be more burdensome than the disease.

The President considered the paper valuable. He particularly appreciated the galvanometer attached to Mr. Cardew's apparatus; this was very useful, and superseded the old rough and ready method of trial of the strength of the current on your own person. He had found the constant current very useful to relieve the pain of tabes dorsalis.

JANUARY 25th, 1893.—Clinical Evening. CHRONIC HYPERTROPHIC INFLAMMATION OF THE GUMS WITH LEUCOCYTOSIS.

Case shewn by Dr. Hingston Fox.

Mr. N., aged 24 years, had been in his present condition for about four months. The gums were much swollen, extending as far as or beyond the level of the teeth in several parts, some of the teeth being entirely covered; their substance was soft and spongy, bleeding when lightly touched and sometimes giving rise to sharp hæmorrhage; a little puriform matter exuded on pressure between the gum and teeth. The teeth, so far as visible, were much discoloured; some were carious: the breath was fetid. Small hardish

nodular tumours existed in the skin in several localities; on the cranium, over the sternum, on one arm, on the pubes and legs: they were of a few months' growth, and were painless. There were some dyspeptic symptoms with tendency to diarrhea. A moderate degree of anæmia was present, the eyes were somewhat prominent, and the spleen enlarged; pulse rate, 92; heart normal. The blood contained white cells in greatly increased proportion to the red discs, perhaps as many as one to eight of the latter; the white cells were also large, varying in size, and some of them oval in shape. The urine was concentrated, very acid, s.g. 1025, loaded with urates and pigment, and contained a trace of albumen. There was no special personal or family history; his diet had always been ample and varied, and he was not a bleeder; nor had he, so far as known, taken any mercury. was some similarity to the disorder known as Pyorrhæa alveolaris, or Rigg's disease.

THE PRESIDENT presumed that mercurial stomatitis could be excluded. He had observed an inflammatory condition caused by mere uncleanliness of the teeth.

Dr. F. J. Smith said that a condition like this, only much milder, was often met with in simple anæmia, and was one of the best signs of that disorder. He advised the liberal use of iron.

Mr. F. R. Humphreys queried whether there were any connection between the over-acidity of the urine and the deposit on the teeth.

Dr. Fox stated, in reply to Dr. GLOVER LYON, that no cause of scurvy had been present.

CHRONIC ARSENICAL POISONING.

Case exhibited by Dr. Arthur T. Davies.

Frederic T., aged 41 years, had been working for six weeks in a manufactory where white arsenic is used for making a poisonous paste. He attended at the Metropolitan Hospital on 23rd inst., complaining of a painful itchy rash on the face, back of the neck, inner side of elbows, legs, and scrotum; also of sore eyes, sickness, and pain at the stomach, but no diarrhœa. The symptoms began 14 days before. He presented acute eczema (eczema arsenicale) of the face, with marked double conjunctivitis, but scarcely any photophobia.

The tongue had a raw appearance, and the gums had greatly receded from the teeth. The rash, largely papular in character, was seen on the back of the neck, and on the limbs and scrotum. In reply to DR. HINGSTON FOX, DR. DAVIES stated his belief that the arsenic had entered the system both internally and externally, and in reply to DR. F. J. SMITH that he had learned the patient's occupation at the very outset of his examination, and so was led to the diagnosis.

FIBROID DISEASE OF THE LUNGS.

Two cases shown by Dr. W. J. Hadley.

(1).—David H., aged 22 years. No phthisis in family history. Measles and pertussis in childhood. "Inflammation of lung" 14 years ago, cough and chest trouble since that date. General health good, able to work well as a gardener. Present signs: fingers distinctly bulbous at ends: heart displaced to $2\frac{1}{2}$ inches outside nipple line; systolic bruit in pulmonary area. Right lung enlarged and emphysematous, with slight dulness towards base. Left lung contracted: evidence of consolidation and excavation behind and at the base: well-marked cavernous sounds around the angle of the scapula. Stomach drawn up: albuminuria copious. (2).—Albert G., aged 16 years. No family history of phthisis. Measles and pertussis eight years ago; cough and chest trouble since then. General health fairly good. rather under-sized, but able to do his work well. Present signs: fingers not bulbous, heart displaced well into left axilla, no bruit. Right lung enlarged and emphysematous, otherwise healthy. Left lung contracted: evidence of consolidation and excavation at base and behind; wellmarked cavernous sounds at angle of scapula. Stomach resonance heard at fourth rib in axilla; urine free from albumen.

Remarks.—These cases were shown as typical examples of fibroid disease of the lungs. Were they common? As they had collected 50 to 60 cases in two years, he thought they were not curiosities. What were their causes and

antecedents? In 60 to 70 per cent. there was a history of measles or pertussis when young, and of cough, etc., since then; probably a catarrhal pneumonia had complicated the specific fever. When the disease originated later in life, chronic bronchitis and pleurisy were the commonest antecedents. Syphilis would also cause it; it was a common accompaniment. in some degree, of tubercular affection of the lungs, and lastly inhalation of irritating forms of dust set it up,—"dust-lungs." The average age of cases had been from 20 to 40 years, but he believed that it nearly always commenced earlier than this. but took time to produce much noticeable chest trouble. The symptoms were those of chronic bronchitis—cough, expectoration, dyspnœa, with hæmoptysis added. But they differed from those of phthisis in the absence of wasting and hectic, the good slow pulse, and general mental and physical ability. The physical signs were those of consolidation with excavation, of contraction of lung with displacement of viscera. Later on came congestion of organs, bulbous fingers, cardiac hypertrophy, albuminuria. Diarrhœa and œdema, hectic. acute disease in the other lung, or fatal hamoptysis, carried them off.

FIBROID DISEASE OF THE LUNG.

Case shown by Dr. Glover Lyon.

A woman, aged 42 years, with a history of chest delicacy in childhood. When she was 16 her mother was told she could not live to 20 years of age; otherwise there was no history of acute lung illnesses, nor had she suffered to any extent from cough or expectoration, nor had rheumatic fever. A burning pain in the left side was complained of. Patient's appearance was healthy. The usual signs of contraction of the left lung were present. The heart was apparently hypertrophied, and the impulse was felt nearly in the axilla; a rough presystolic murmur was heard.

DR. F. C. TURNER considered that these were cases of damaged lung, in which the damage had been repaired, and not cases of fibroid phthisis. It was not in his view a condition of disease, but one of crippling, comparable to cured hip-joint disease, where fibrous tissue had been deposited.

The cases were now quiescent, and had been much the same for many years. Part of the damaged organ was replaced by cicatricial tissue. There was nothing to cause pyrexia or wasting, and it was, therefore, not surprising that the general health was not greatly affected, but that ordinary work could be performed. There was, of course, liability to further disease, tubercular phthisis, or ulcerative or gangrenous processes; but the condition was entirely different from that of fibroid phthisis, a slow progressive disease in which lung is destroyed.

Dr. Fortescue Fox would discriminate between those cases which were progressive and those in which no further serious change would take place. The condition of the sputum and of the other lung were important prognostic signs. The expectoration in typical fibroid lung was peculiar—it came at rare intervals, was fetid, large in quantity, and almost vomited. There was also much variability in the physical signs. When the cavities were dry, signs were few, but when a slight catarrh occurred, moist sounds were heard over almost the whole side. He agreed largely with Dr. Turner, but surely there was in all these cases a slow progress to further destruction of tissue. He was inclined to regard all these cases as properly tubercular.

THE PRESIDENT said that many of these cases used to be regarded as the results of pleurisy, and were recorded as such by the older writers, but they were evidently mistaken. He had met with a good many fibroid lungs; several cases had occurred in a workshop where there was much ivory dust.

Dr. Arnold Charlin referred to his specimens of fibroid disease of the lungs lately exhibited (see p. 99), and recounted the history and characters of the specimens. The fibroid change in the liver and kidneys showed that the lung disorder was only a local manifestation of a constitutional disease. Dr. Handfield Jones had laid down these principles many years ago.

Dr. Fred. J. Smith would say that such typical cases of fibrosis of lung as had been shown were uncommon, but such as Dr. Turner alluded to, where damaged lung had been repaired, one met with every day; the process occurred more or less in all cases of phthisis. Great confusion had arisen in the pathology for want of concert and agreement between different writers in the use of terms which were not clearly defined. Fibrosis was sometimes pathological, sometimes traumatic or conservative, following the onset of tubercle, pneumonia, etc. Hutchinson had defined keloid as fibrosis of scar tissue, could not these cases be a keloid of the lung? Sir A. Clark's definition of phthisis involved an ulcerative or suppurative process; in these cases there was neither, yet there was destruction of lung.

Mr. T. H. Openshaw, referring to the clubbing of the fingers, attributed it to long-standing congestion of the finger ends due to obstructed circulation through the lungs.

Dr. Hadley, replying, said that he had not used the term fibroid phthisis, but simply fibroid disease of the lung. The cases were distinctly progressive; in the elder man the right lung had now become

affected and albuminuria had come on. On the question of their tuber-cular nature, in 48 out of 50 or 60 cases tubercle bacilli had never been found though repeatedly searched for; in three cases sections were stained and examined post mortem with the same result. The younger patient had been injected with Koch's liquid, but no reaction followed. As regards the general tendency of fibrosis, might not disease of a central organ such as the lung, which produced chronic congestion of many organs, produce secondarily fibroid changes in them, just as in the case of heart disease?

THE ANNUAL GENERAL MEETING

was held on Wednesday, February 8th, 1893, MR. F. GORDON BROWN, President, in the Chair.

The Report of the Council for the past year was read by the Senior Honorary Secretary, Mr. J. Poland, and the Financial Report was read by the President. It was resolved that these Reports be adopted, printed and circulated, in the usual manner.

Mr. F. M. Corner moved, and Dr. F. J. Smith seconded, that the sum of Fifteen Guineas, received in Composition Fees from Fellows during the past year, be invested in Goschen Consols. This was carried unanimously.

The Report of the Library Committee for the past year was read and adopted, and ordered to be printed with the other reports.

A Ballot was then taken for the appointment of Officers of the Society for the ensuing year. (See page 7).

Votes of thanks were accorded to the President and other Officers of the Society for their services during the past year.

The Fellows then adjourned to the Theatre to hear the Annual Oration, which was delivered by John S. E. Cotman, M.R.C.P., Ed. (See page 19).

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